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Draft Environmental Impact Report/Statement

Tent City

Boston, Massachusetts

Prepared for:
City of Boston
City Hall
Boston, Massachusetts

Prepared by:
Sasaki Associates, Inc.
64 Pleasant Street
Watertown, Massachusetts

July, 1985

COVER SHEET

Project: Urban Development Action Grant. (UDAG)
Tent City EOEA #5406 (Parcels 11A and 11B, South End Urban Renewal Area)

Location:
Boston, (Suffolk County) Massachusetts

Status:
Draft Environmental Impact Statement
Draft Environmental Impact Report

Proponent:
Tent City Corporation

Responsible Agency:
City of Boston (Boston Redevelopment Authority) acting for U.S. Department of Housing and Urban Development

Cooperating Agencies:
Massachusetts Housing Finance Agency, Massachusetts Executive Office of Communities and Development

Agency Contact:
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Boston Redevelopment Authority
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Boston, MA 02201
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Comments must be received by: August 19 (NEPA)
August 10 (MEPA)

Abstract of the statement:

This statement describes and evaluates the environmental, cultural socio-economic and physical impacts of the Tent City project proposed to be constructed on Parcels 11A and 11B, South End Urban Renewal Area, and bounded by Dartmouth Street, Columbus Avenue, Yarmouth Street and the South West Corridor line in Boston's South End. The project will provide approximately 270 housing units (25% low income, 50% moderate income, 25% market rate), a two level below grade parking structure for 698 cars and up to 7,500 sq. ft. of community retail space. The purpose of the project is to provide increased housing opportunities for low- and moderate-income residents of the South End and to redevelop the largely vacant and underutilized site in a manner that re-establishes the physical character of the surrounding South End historic neighborhood on the site. The project will also provide needed community oriented retail space for the South End neighborhood.

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SUMMARY

The Tent City development proposal consists of 270 rental housing units, up to 7,500 square feet of retail space, and a 698-space, below grade parking garage to be constructed on parcels 11A and 11B of the South End Urban Renewal Area, Mass. R-56. The site is a 3.3-acre parcel bounded by Dartmouth Street, Columbus Avenue, Yarmouth Street, and the Southwest Corridor Deck abutting Copley Place. At present, the site is occupied by a paved, surface parking lot for 276 vehicles and 13, dispersed rowhouse buildings, most of which are vacant or largely vacant.

This project is the result of 17 years of planning to provide affordable housing on the Tent City site. As a result, 25 percent of the proposed units will be subsidized for lower-income households, 50 percent will be subsidized for moderate income households, and 25 percent will be provided at market rates.

The project has been designed to complement the historic rowhouse characteristics of adjacent South End residences while providing a gradual architectural transition to the modern, mid-rise Copley Place. Although most of the existing buildings on the site will be razed, four rowhouse buildings at the corner of Yarmouth Street and Columbus Avenue will be rehabilitated and incorporated into the project.

Financial assistance for the construction of Tent City is being sought from the U.S. Department of Housing and Urban Development (UDAG). Rental assistance will be provided by the Massachusetts Housing Finance Agency, the Massachusetts Executive Office of Communities and Development, and the City of Boston.

Assessed in this document are the project's impacts on social and economic conditions, aesthetics and visual quality, cultural resources, wind and shadow, geology and groundwater, water and sewer services, energy use, parking supply and traffic, air quality, and ambient noise levels.

1.0 DESCRIPTION OF THE PROPOSED PROJECT

1.1 PURPOSE AND NEED FOR ACTION

The purpose of the Tent City project is to provide housing opportunities for all income groups in the South End, but particularly for low- and moderate-income households. The project has been designed to respond to the City's need for both low and moderate-income housing. This need has been recognized by the BRA since the mid 1960's, and was reaffirmed by the City of Boston at the time UDAG funding was obtained for Copley Place. This project will complete the balanced development of the Copley Square area as envisioned during the planning and approval of Copley Place.

1.2 GOALS AND OBJECTIVES

Since the approval of the South End Urban Renewal Plan in 1965, it has been a primary objective of the City of Boston and South End community groups to develop affordable housing on the Tent City site to offset the long term displacement of South End residents that has been occurring due to escalating housing prices. The primary goal has been to balance the need for decent housing opportunities with the protection of the integrity of the adjacent historic and residential neighborhoods. This goal was reaffirmed in the early 1980's when the City Council applied for and was granted UDAG funding for development of Copley Place while identifying a need for additional housing in this area. Until now, the resources needed to achieve this goal had not been assembled. The proposed project will fulfill this goal.

The specific objectives of the Tent City development plan are to:

- provide 270 units of housing for a variety of income groups, particularly moderate-income households;
- eliminate the under utilized and blighted condition of the Tent City site;
- expand economic activity of adjacent commercial uses, thereby increase the area's neighborhood services and community retail opportunities and resulting in the creation of some new jobs;
- provide an attractive architectural transition from the historic character and residential scale of the South End and the commercial mid-rise scale of Copley Place and the Copley Square retail area.

1.3 PROJECT HISTORY

Since 1965, with HUD's approval of the South End Urban Renewal Plan, the City of Boston has sought to develop housing opportunities on the project site, identified as parcels 11A and 11B in the plan. However, as the City held title to less than one half of the property and the financial resources needed to obtain and develop the remaining parcels were unavailable, the fulfillment of the renewal plan for this site has been subject to numerous setbacks.

Angry over the City's lack of progress toward providing affordable housing opportunities, South End residents occupied the project site in 1968 and erected a "Tent City" to dramatize the issue. In response, the City reaffirmed its commitment to provide affordable housing opportunities on the site.

No further public action regarding the site (now referred to as Tent City) occurred, however, until the fall of 1974 when a proposal to construct an 18-story luxury apartment building was disclosed. This proposal was protested by the South End Project Area Committee (SEPAC), the elected urban renewal review board in the South End, and led to the establishment of the Tent City Task Force. The Task Force, a subcommittee of SEPAC, was charged with developing guidelines for development of the Tent City site. The guidelines resulting from the Task Force were approved by SEPAC in 1978.

Realizing that further progress may require a more active role, SEPAC established the Tent City Corporation (TCC) in 1979. TCC, subsequently, entered into partnership with Macomber Development and Housing Associates and sought designation from the BRA as developer of the Tent City site. At this time, William Fitzgerald, the owner of approximately 50 percent of the site, also applied for designation. After reviewing both development proposals, the BRA encouraged the two applicants to negotiate a joint venture agreement and hired a covenor to assist in the process. These negotiations proceeded throughout 1980 but failed to resolve differences.

Also in 1980, the UDAG application for Copley Place was filed. Community opposition to this project, which was perceived as having a negative impact on low and moderate income families, led to a reaffirmation of the City's commitment to providing affordable housing on the Tent City site and assurances that a UDAG application would be submitted for this project. This application, however, was not filed until November 1984.

During 1982 and into 1983, Urban Investment and Development Company (UIDC), the developer of Copley Place, purchased that portion of the site owned by William Fitzgerald and proposed to construct a seven-story parking garage for 1,400 vehicles. This above-ground design was later revised to a below-grade design, but the number of spaces proposed continued to draw opposition.

In 1983, TCC assembled a new development team and applied to the BRA for tentative designation as sole developer of the Tent City site. This designation was granted on November 15, 1984. On November 30, 1984, a UDAG application for $9,968,000 was filed for the Tent City project. On April 15, 1985 the UDAG application was revised to a request for a $3,030,000 UDAG. At present, TCC is finalizing negotiations with UIDC for full site control and proceeding to obtain all permits and approvals necessary to construct the project.

Additional details concerning the project's history are included in Appendix 1.

1.4 PROJECT DESCRIPTION

The proposed project is construction of approximately 270 residential units, 7,500 square feet of commercial space, and below-grade parking for 698 vehicles on the Tent City site in Boston, Massachusetts. The Tent City site is a 3.3-acre parcel bounded by Dartmouth Street, Columbus Avenue, Yarmouth Street, and the MBTA Southwest Corridor (Figures 1 and 2).

The project has been designed to provide a gradual physical transition from the historic South End to the modern Copley Place. Construction along Columbus Avenue, Yarmouth Street, and approximately 200 feet along Dartmouth Street will replicate the architectural style of the adjacent South End row houses. There will be approximately 91 new townhouse units in the project along the southern portion of the Dartmouth Street frontage, along Columbus Avenue and on Yarmouth Street. These structures will consist of four stories and contain approximately 6-1BR, 8-2BR, 63-3BR and 14-4BR apartments. Additionally, there will be approximately 12 renovated units in the four existing building fronting Columbus Avenue at the corner of Yarmouth Street. These renovated buildings will contain approximately 4-1BR, 4-3BR and 4-4BR units. Structures along the Southwest Corridor and northern portion of the Dartmouth Street frontage will rise gadually in height to a maximum of ten stories at the corner of the Southwest Corridor and Dartmouth Street adjacent to Copley Place. The ten-story building will consist of 86-1BR and 82-2BR units with all commercial space contained on the ground floor.

While most of the development will consist of new construction, four buildings at the corner of Columbus Avenue and Yarmouth Street will be rehabilitated. These four structures are typical of the row houses that once occupied the Tent City site and still are plentiful throughout the South End. They represent the architectural style that the new structures will recapitulate. All other structures on the site (six along Dartmouth Street, one along Yarmouth Street, and one along the Southwest Corridor) will be demolished in order to carry out the overall program.

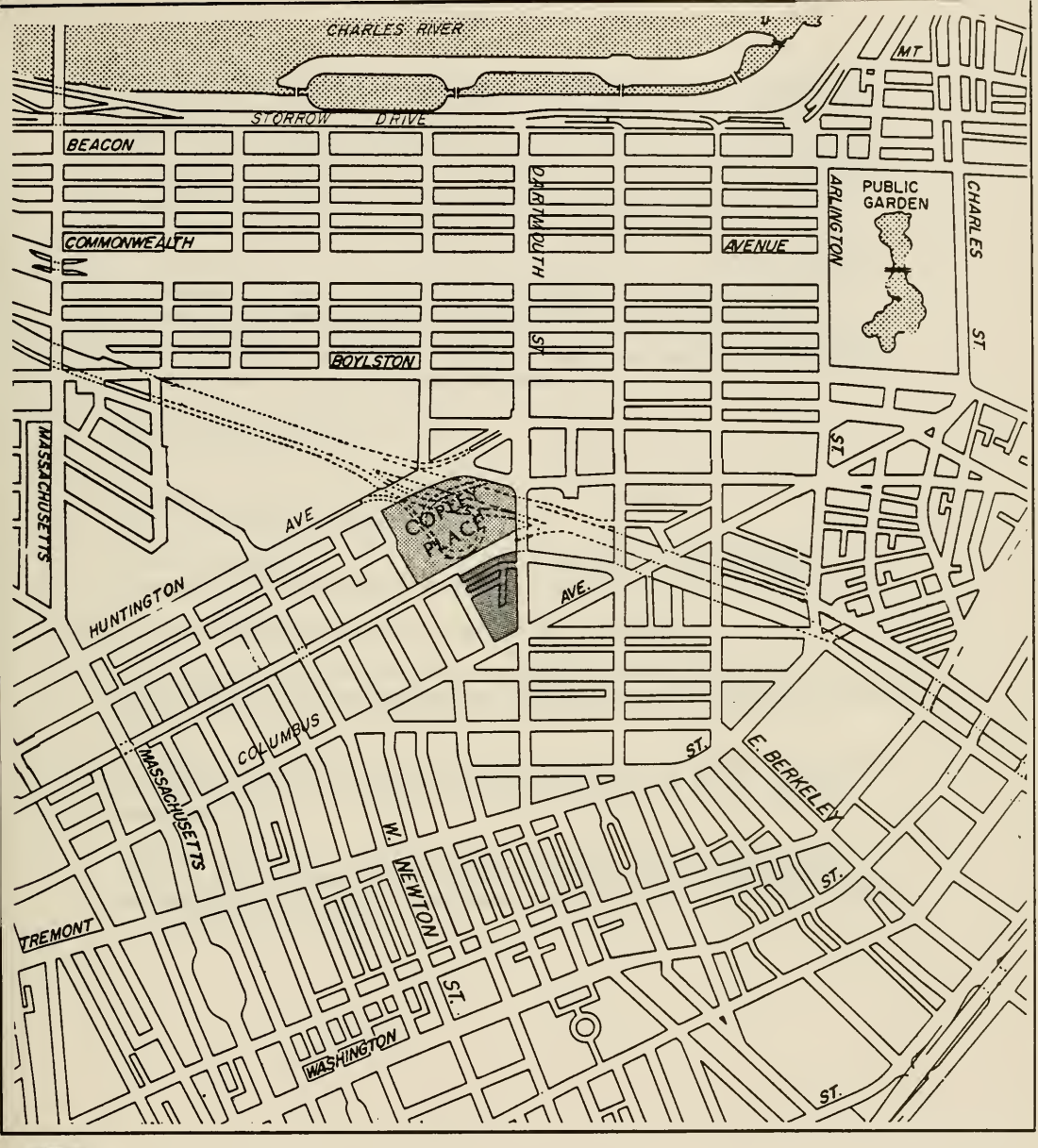
It should be noted that a final adjustment of the precise number of units, distribution of the unit type, and final massing of the midrise structure may change slightly as the project design is refined. However, the basic design concept as presented above will be preserved.

The development will be subsidized to provide rental housing for a mix of income levels. Twenty-five percent of the units will be available for low income households, 50 percent will be available for moderate income households, and 25 percent will be rented at market rates. Units of all sizes throughout the development will be available to each income group so that particular income group concentrations do not develop in a single area of Tent City.

Tent City
Boston, Massachusetts
FIGURE 1
SITE LOCUS

Scale: 1: 25,000

Sasaki Associates, Inc. Watertown, Massachusetts



Project Site

Tent City
Boston, Massachusetts

FIGURE 2
SITE LOCATION

Scale in feet
0 900 1800

Sasaki Associates, Inc. Watertown, Massachusetts

In addition to the housing, a two-story underground parking garage is proposed to be constructed on the site. This garage will provide parking for 698 vehicles. One hundred and twenty-nine (129) spaces will be assigned to the housing, 293 to 367 spaces will be assigned to Copley Place commercial office tenants, and 202 to 276 spaces will be available for commercial retail uses. The final allocation of 569 commercial spaces to be controlled by UIDC has not yet been decided.

Federal funding for the construction of this project is being sought from the Department of Housing and Urban Development (HUD) via an Urban Development Action Grant (UDAG) of $3,030,000 (from revised UDAG application of April 15, 1985). Application for this UDAG was filed on November 30, 1984. Funding to be used to make the housing available for low and moderate income households includes:

. Massachusetts Housing Finance Agency (SHARP funds)	$401,250/year
. Executive Office of Communities and Development (Chapter 707 funds)	$545,000/year
. City of Boston (Neighborhood Development funds)	$850,000-1 million/year (annual average for 30 years)

Permits and reviews required for the project include:

- a Sewer Connection Permit from the Massachusetts Department of Environmental Quality Engineering (DEQE), Division of Water Pollution Control;

- a Fossil Fuel Utilization Facility Permit From the DEQE, Division of Air Quality Control (required if fossil fuels are to be used for heating); and

- reviews in accordance with 950 CMR 71 and 36 CFR 800 (Procedures to Protect Historic and Archaeological Properties), conducted by The Massachusetts Historical Commission and the National Advisory Council on Historic Preservation.

Project Schedule

At this time the proposed construction schedule for Tent City is as follows:

November, 1985	Begin garage excavation and site work. Four months will be required for garage foundation excavation, pile cap work, and pouring the foundation.
March, 1986	Begin garage construction. Eleven months required for garage construction.
August, 1986	Housing construction will begin 5 months after garage construction commences. Approximately 18-20 months will be required for construction.
February, 1987	Finish garage construction.
June, 1987	Finish housing construction.

2.0 DESCRIPTION OF ALTERNATIVES

2.1 NO-BUILD ALTERNATIVE

The No-Build alternative to the proposed Tent City project has been examined. Examination of this alternative was necessary to determine base-line conditions from which development-specific impacts to transportation systems and air quality could be assessed.

The No-Build alternative is the continuation of the present use of the Tent City site as a 276-space surface parking lot used by Copley Place office employees bounded by four groups of badly deteriorated brick rowhouses (some of which are vacant). Currently the site is underutilized, devoted almost exclusively to surface parking, and detracts from the visual quality and urban fabric of the South End. Continued utilization of the site as a parking lot would preclude future use of the site for residential development, the goal of the neighborhood and City for 20 years.

Moreover, no additional parking spaces for Copley Place employees, visitors, and shoppers would be constructed, and no new construction and permanent jobs would be created.

Therefore, given the seriously underutilized condition of this important site and the current inefficient allocation of the site as an urban land resource if it were to remain undeveloped the No-Build alternative is not considered to be a viable alternative to the proposed plan.

3.0 IMPACTS OF THE PROPOSED PROJECT AND ALTERNATIVE AND MEASURES TO MITIGATE ADVERSE IMPACTS

3.1 SOCIAL AND ECONOMIC CONDITIONS

The potential impacts of the project on social and economic conditions relate to housing, community facilities/services, dislocation/ relocation, and community cohesion. The study area of this asessment, the South End neighborhood, is defined by the Boston Redevelopment Authority (BRA) as Planning District Six (Figure 3). This geographic area is consistent with Neighborhood Statistics Program Area #61 of the 1980 U.S. Census.

3.1.1 Existing Conditions/Affected Environment

Community Composition (income profile and ethnic diversity)

The income profile of the South End is low for the City of Boston and reflects the relatively large percentage of lower income households in this neighborhood. A comparison of South End and city-wide income profiles is presented in Table 1. The income levels presented in Table 1 are defined in accordance with HUD Section 8 program income guidelines (lower income: less than 80 percent of median; moderate income: 80 to 120 percent of median; above moderate income: greater than 120 percent of median).

Table 1. South End household income characteristics (per annum).

	Median Income	Lower Income	Moderate Income	Above Moderate
South End	$10,845	47%	17%	36%
Boston	$12,530	40%	17%	43%

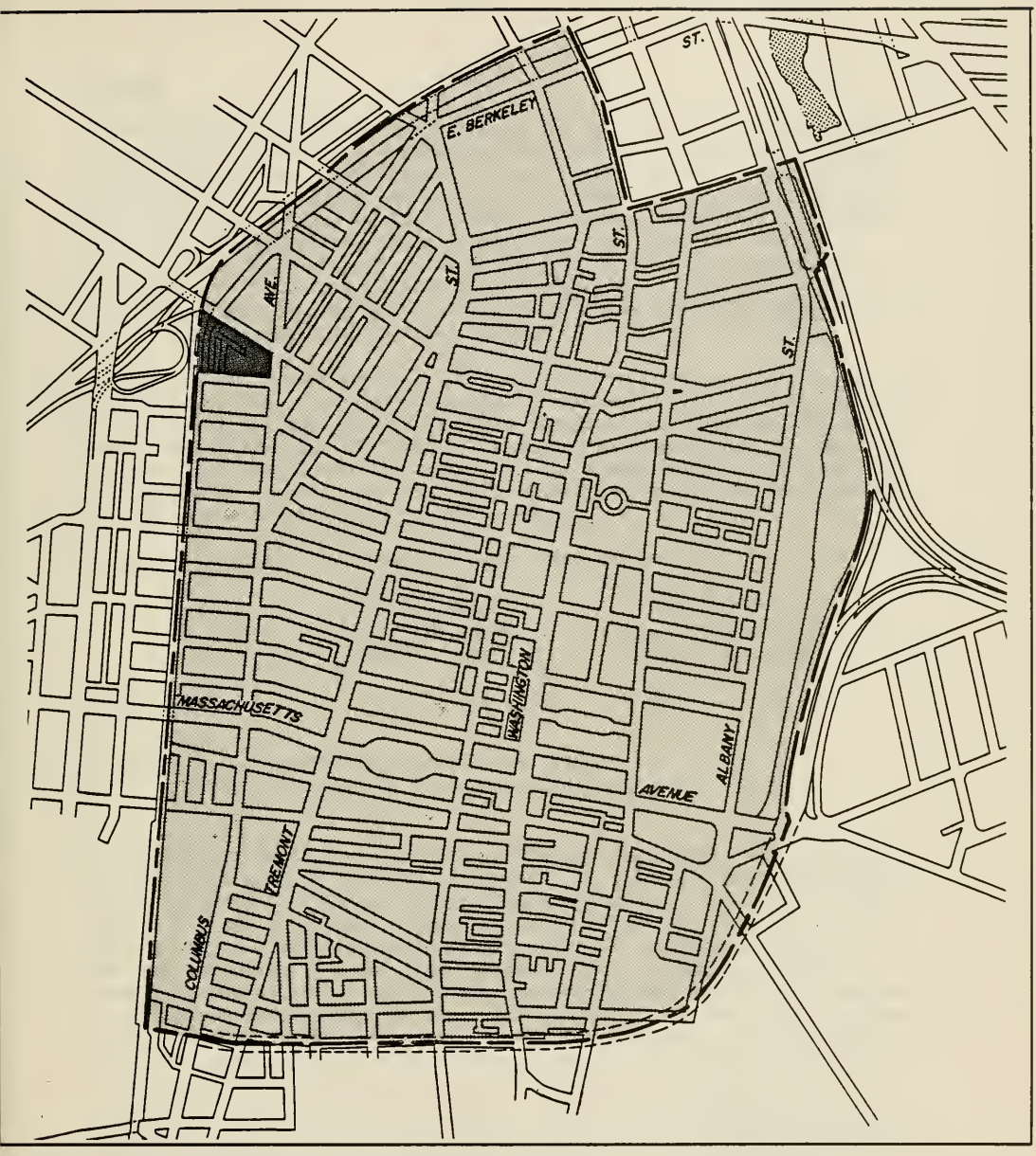
Source: Data-1980 U.S. Census.

The South End community exhibits a wide mix of income groups, racial groups and housing types. A review of the statistics in 1980 indicate that the South End exhibited a more balanced mix of racial groups than any other neighborhood in the City. Table 2 illustrates the racial mix compared with the City of Boston as a whole.

Table 2. Racial composition of the South End/Boston.

	White	Black	Hispanic	Asian
South End	40%	25%	14%	21%
Boston	69%	20%	6%	4%

Source: Boston Redevelopment Authority Household Survey, conducted by the Center for Survey Research, 1980.



Project Site

BRA Planning District 6

Tent City
Boston, Massachusetts

FIGURE 3
PLANNING CONTEXT

Scale in feet
0 900 1800

Sasaki Associates, Inc. Watertown, Massachusetts

Housing

The existing housing stock in the South End is diverse, consisting of renovated and unrenovated rowhouses mixed with more recently constructed housing developments. The amount of housing has grown moderately since 1970 when the U.S. Census estimated 10,885 total units. The 1980 U.S. Census reported a total of 12,167 units. However, according to the BRA there were 13,761 housing units in the South End in 1980. This difference in the number of units is attributable to discrepancies in U.S. Census and BRA data collection methodologies. Today, the BRA estimates 14,831 housing units are located in the South End (Anne Hafrey, BRA Research Department, personal communication).

Housing tenancy characteristics in the South End changed significantly from 1970 to 1980. The owner occupied units rose from 11 percent in 1970 to 27 percent in 1980 (Table 3). This compared to relatively little change within the City of Boston as a whole, and was caused, in part, by a renewed interest in the South End by middle and upper income families and housing assistance programs which facilitated purchases by lower and moderate income buyers and first-time buyers.

Table 3. South End and Boston tenancy characteristics.

	Percent Units Owner Occupied		Percent Units Rented	
	1970	1980	1970	1980
South End	11	27	89	73
Boston	27	30	73	69

Source: Boston Redevelopment Authority (1980)
1970 U.S. Census of Population and Housing.

Current estimates of the mix of low, moderate and market rate housing in the South End are not available. However, in 1978, the South End had a higher proportion of subsidized housing (estimated at 38 percent, 4,995 units) than any other Boston neighborhood. Subsidized housing includes both low and moderate income households that use various grant, rent subsidy, and rehabilitation loan programs. Low and moderate income households not receiving such housing assistance are effectively "market rate" households occupying housing units typically of poorer quality but paying rents which reflect market value. The continuing availability of subsidized housing is affected by the nature of certain loan/rehabilitation assistance programs (for example, the HUD 312 program) which are intended to upgrade existing housing stock. Upon repayment, a rehabilitated unit is no longer considered subsidized housing, and in most cases will cycle into market rate housing. Therefore, the amount of subsidized housing in an area is in constant flux. The Tent City project, however, will provide permanently affordable housing.

Existing housing stock at the Tent City site consists of 13 rowhouse buildings, of which six buildings are occupied or partially occupied and seven are considered vacant. The total number of housing units on the site is estimated to be 37 of which 11 units are currently occupied. The remaining units are unoccupied due to their uninhabitable condition. Approximately 15 people currently reside in these 11 units on the site. Other uses on the site include three to five small business establishments and a commercial parking lot.

Police Protection

The site is located in Police District D and is within a heavily patrolled area.

Fire Protection

The City of Boston Fire Department provides fire protection service to the site. The Tent City site is located within Fire Division 1, District 4. Four fire stations are located within a three minute response time to the site (Captian McHugh, Personal Communication). The station locations and assigned equipment are:

- Tremont Street at West Concord (Engine 22),
- Harrison Avenue at Malden (Engine 3),
- Boylston Street at Hereford (Engine 33, Ladder 15), and
- Columbus Avenue between Arlington and Berkeley, (Engine 7, Ladder 17).

The locations of these facilities are identified in Figure 4.

Public Schools

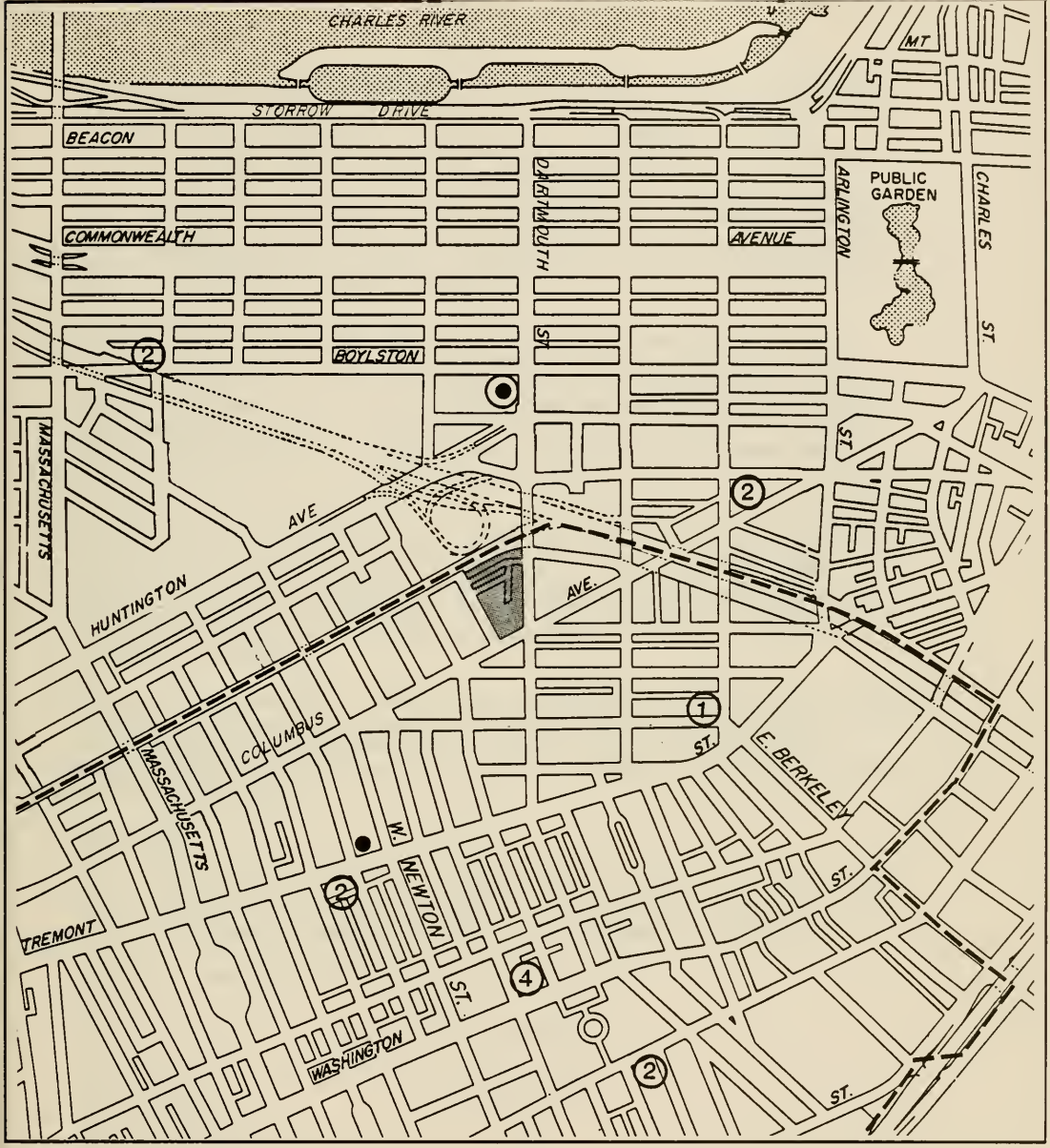
The Tent City site is located within Geocode 146 of the Boston School Department student allocation system. Schools which are assigned to Geocode 146 are:

- Elementary (K-5): Blackstone School, 380 Shawmut Street and various magnet elementary schools throughout the city;

- Middle School (6-8): Timilty School, 205 Roxbury Street; and the Mackey School, 90 Warren Avenue which is the magnet middle school in the South End; and

- High School (9-12): Charlestown High, 240 Medford Street.

It should be noted that each year the Boston School Department assesses student population by geocodes throughout the city to determine which schools may be nearing capacity. Those geocodes with increasing numbers of students may be reassigned to another school with available capacity in order to more evenly distribute the number of students throughout the school system. Therefore, most schools enrollments are kept at or near their capacity.



Project Site

BRA Planning (Dist. 6)

① Police Station (Dist. D.)

② Fire Station

◉ Main Library

● South End Branch Library

④ Elementary School (K-5)

Tent City
Boston, Massachusetts

FIGURE 4
PUBLIC FACILITIES

Scale in feet
0 900 1800

Sasaki Associates, Inc. Watertown, Massachusetts

The Blackstone School presently is operating near capacity (estimated at 900 students). Seats are available within classrooms but no additional classroom space is available (Jack Halloran, Director of Student Services, Boston School Dept., Personal Communication). The current trend of rising numbers of elementary school students is expected to continue and may slightly increase enrollments in facilities across the city in the future. However, the magnet school system which operates at the elementary school level provides flexibility in student assignments and helps to mitigate potential overcrowding by reassigning geocodes to schools with excess capacity each year.

The Timility School presently is operating near capacity (340-350 students) (Jack Halloran, Personal Communication). However, at the middle school level, the magnet school system provides flexibility in student assignments as does the yearly geocode reassignment to schools with available capacity. Additionally, the Mackey School, which is a magnet middle school is located near the site on Warren Avenue and provides additional nearby middle school opportunities in the South End.

Charlestown High, located within High School District 7, has an estimated capacity of 1,100 students. Enrollment projections indicate that the 1985-86 school year may reach the capacity of this facility (Jack Halloran, Personal Communication). However, as with the elementary and middle schools, the magnet high school system relieves this condition through reassignment of students by geocode to maintain acceptable enrollment levels.

It should be noted that a significant percentage of the Tent City tenants will be relocating from other South End residences and the availability of the magnet school system on all three levels will also help to disperse new students throughout the entire Boston school system to avoid school overcrowding.

Open Space

The locations of the open space resources of the South End, including parks, playgrounds, and public squares, are indicated in Figure 5. The acreage included in each of these spaces is presented in Table 4.

Table 4. Open space resources in the South End.

Parks	Area (in acres)
Peter Park	Not Available
Union Park	Not Available
Watson Park	.10
8th Street Park	.38
Montgomery Park	.46
Hayes Park	.35
Sparkon Park	2.50
Chester Park	.80
Hislock Park	Not Available
Derby Park	5.52
Park Total	10.11 Acres

Project Site

Tent City
Boston, Massachusetts

FIGURE 5
OPEN SPACE RESOURCES

Scale in feet
0 250 500 1000

Sasaki Associates, Inc. Watertown, Massachusetts

Playgrounds/Play Areas	Area (in acres)
Sullivan Playground	Not Available
Rotch Playground	2.80
Bradford St. Tot Lot	.04
Carlton Playground	.05
O'Day Playground	.87
Carter Playground	4.95
Cumston Street Play Area	.02
Plympton Street Play Area	.09
West Rutland Square Play Area	.13
Wilkes Street Play Area	.06
Playgrounds/Play Area Total	9.01 Acres

Public Squares	Area (in acres)
Blackstone Square	2.41
Braddock Park	.09
Harriet Tubman Square	.05
Franklin Square	2.41
Rutland Square	.17
Worcester Square	.37
Plaza Betances	Not Available
Public Square Total	5.50 Acres
GRAND TOTAL	24.62 Acres

As a compliment to the existing open spaces, a 30-acre linear park is to be constructed on the deck over the Southwest Corridor transit system. This park will be immediately adjacent to the Tent City site.

Regional open space is provided by the Boston Common/Public Gardens which are located approximately 0.7 miles to the northeast of the project site.

Library Services

The South End Branch of the Boston Public Library System is located at 685 Tremont Street, approximately 0.2 mile from the project site. This facility houses approximately 28,500 volumes. The Main Library of the Boston Public Library System is located at 666 Boylston Street, approximately 0.25 mile from the project site and across the Massachusetts Turnpike. The Main Library consists of the general library and research library and contains over 4.6 million volumes.

Health Care

Hospital facilities located within approximately one to two miles of the project site include:

- Boston City Hospital,
- Massachusetts General Hospital,
- Massachusetts Eye and Ear Infirmary,

. New England Medical Center Hospital,
. Shriners Burn Institute, and
. University Hospital.

These are 24-hour facilities which offer traditional services associated with hospitals (general treatment, emergency care, outpatient services, etc.).

Solid Waste Collection

Residential solid waste is collected in the City of Boston by private companies under contract to the City. Collection in the project area occurs twice weekly. Commercial establishments are not serviced by the City and must make trash collection arrangements with private companies licensed in the City. The total estiamted solid waste generation of the 11 occupied households on the site is approximately 100 pounds per day.

3.1.2 Probable Impacts

Community Composition

By providing housing opportunities for all income groups, and family sizes, the project will reinforce the ethnic and income diversity of the South End community. Community cohesion should also improve because of the significant increase in new residential units and community oriented commercial uses to be located on the site.

It is estimated that approximately 724 people will reside at Tent City following development. Since no phasing is proposed and housing demand is high, the influx of tenants can be expected to be rapid once construction is completed. It is anticipated that a very large percentage of the Tent City residents will relocate from other South End residences. However, it can be expected that most of the units vacated by South End residents moving into Tent City will become occupied by new South End residents, which will slightly increase the overall South End population. However, it is estimated that the net increase in the South End's population as a result of Tent City would be under 1 percent. This population increase will be significantly less than the average population increase of 712 persons or approximately 2.3 percent experienced in the South End from 1970 to 1980.

Housing

The Tent City development program includes 270 units of mixed-income rental units. This will increase the amount of housing in the South End by approximately, 233 units. (Note: There are an estimated 37 housing units currently on the site, of which 11 are currently occupied. The remaining units are vacant and uninhabitable.) A variety of unit sizes are proposed, including one, two, three, and four-bedroom apartments. Twenty-five percent percent of the units will be subsidized for low income households and 50 percent for moderate income households. The remaining 25 percent will be rented at market rate. The distribution of housing units proposed for the site is presented in Table 5.

Table 5. Tent City housing unit summary.

Unit Type	Low Income	Moderate Income	Market Rate	Total
1 Bedroom	24	48	23	95
2 Bedroom	22	46	22	90
3 Bedroom	17	33	17	67
4 Bedroom	4	9	5	18
Total	67	136	67	270

This mix of housing proposed affords the greatest opportunities for moderate income households, the least represented group in the South End. Furthermore, the variety of unit sizes will contribute to the diversity of the South End housing stock.

All of the proposed units will initially be rental units. However, an objective of the project is to pursue the possibility of eventually converting all or a portion of the units to a limited equity cooperative development, thereby providing homeownership possibilities for low- and moderate-income families.

Police Protection

Adequate police protection currently is available to accommodate the proposed project (Sgt. MacDonald, Boston Police Dept., Personal Communcation).

Fire Protection

Fire protection needs for the project can be adequately serviced by existing Fire Department facilities (Capt. McHugh, Boston Fire Dept., Personal Communication).

Public Schools

The proposed Tent City Development is estimated to generate a total of 172 school-aged children. The breakdown of this estimate by school level is presented in Table 6. The estimate and distribution was derived from standard generation rates presented in Burchell and Listokin (1980).

Table 6. Estimated number of school age children - distributed by grade.

Elementary (K-5)	Middle (6-8)	High (9-12)	Total
78	39	55	172

It is anticipated that students from the Tent City development will enter the area schools during the middle of the 1986-1987 school year. Assuming that enrollments in the area schools do not change significantly by this time, the addition of the projected students from Tent City may slightly increase enrollments at these facilities, all of which currently operate near capacity. However, because of the flexibility inherent in the school assignment process (student assignments are redistributed each year by geocodes to keep enrollments at or near capacity and to avoid overcrowding) and because of the inherent student assignment flexibility of the magnet school system which operates at all three levels, the new students resulting from Tent City should not have a significant impact on the Boston Public School System. Moreover, it should be noted that a significant percentage of the Tent City residents will be relocating from other South End residences. This will help to minimize the number of net new students attending the assigned schools in the South End.

Generation of school-aged children from the Tent City site may continue over time. Unlike single-family, owner-occupied developments which tend to have cyclical generation of students, the rental development at Tent City may generate students to the school system at a constant rate more consistent with regional trends in family size. However, due to the favorable rental rates that are expected, it could be anticipated that many residents may reside in Tent City for long periods of time than normally encountered in rental housing. This may actually reduce the number of school-aged children residing in Tent City over the long run.

Open Space

The approximately 724 residents expected to reside at Tent City are not expected to affect the existing open space resources of the neighborhood, particularly because many of the Tent City residents are expected to be relocating from other South End residences. Furthermore, no direct loss of recreational open space will result from the project. The proposed inner courtyard will be an additional open space for residents of Tent City.

Library Services

Existing library facilities are easily accessible from the Tent City site. Both the South End Branch and the Main Library are within acceptable walking distances. The additional demand placed on library resources from the proposed development will not affect existing services. The number of volumes available at the South End branch is more than adequately supplemented by those housed at the Main Library facility.

Health Care

Existing medical facilities within the project vicinity are adequate to service the proposed project needs.

Solid Waste Collection

Solid waste generation from the residential portion of the proposed project is estimated to be approximately 1,700 pounds per day (14 cubic yards of uncompacted domestic refuse). Approximately 100 pounds of solid waste (0.8 cubic yards) will be generated per day by the commercial uses.

The present twice weekly collection frequency will be adequate to service the residential development. Removal of the commercial refuse will be the responsibility of the commercial tenants. Existing disposal facilities will not be overtaxed by the wastes generated at Tent City.

Relocation/Dislocation

The proposed development will cause the temporary relocation of approximately 11 households, including 15 people, and three to five small businesses which employ an estimated six people. Four of the existing residential structures (a total of 16 units) will be rehabilitated. Demolition is scheduled for the other nine buildings on the site. Because the Tent City proposal includes assisted low and moderate income housing, the relocation of residents will be temporary unless the current residents on the site prefer permanent off-site relocation. All current residents will have a right to return to Tent City when the project is completed.

Appendix 2 includes the current Tent City Relocation Plan and should be referred to for more information.

Displacement of on-site businesses will impact proprietors by necessitating relocation. Replacement commercial space for the existing businesses may be difficult to obtain within the site vicinity and at appropriate lease rates. However, the approximately 7,500 net leaseable square feet of commercial space within the proposed Tent City development will provide for a continuance of community orientated commercial facilities which serve the neighborhood. The elimination of an estimated six existing jobs will be more than offset by the 25 full-time and 12 part-time jobs estimated to be available once construction is complete. Furthermore, 417 temporary construction jobs are estimated to become available during the construction period.

3.1.3 Mitigation Measures

Public Schools

Potential capacity exceedences at the assigned elementary, middle and high schools may be mitigated by the magnet school system program. Under this program, schools with existing and projected excess operating capacity are provided with special instruction programs as well as additional student assignments to ease overcrowding at other schools. Additionally, as mentioned, the yearly reassignment of geocodes with increased number of students to schools with available capacity helps maintain an even distribution of students throughout the City and avoid overcrowding in specific schools.

Relocation/Dislocation

Impacts associated with the relocation of existing residents can be mitigated through implementation of an appropriate relocation program. The guidelines of the resident relocation program, as outlined in the UDAG application and the Tent City Relocation Plan (Appendix 2) for the proposed project include:

- timely distribution of information to those affected,
- official notification regarding displacement/relocation,
- relocation services, and
- relocation benefits (moving costs; replacement housing payments).

Informational materials to be given to residents to be displaced are being prepared and will be given to occupants when written offers to acquire the buildings in which they live are given to the property owner.

All occupants will receive the information outlining their rights as owners, as tenants, and as residents, including the minimum length of time they may remain on-site, the name, address, telephone number, and hours of the relocation office, a description of various eligibility criteria, and preliminary general information on types of suitable housing resources available and a description of the general types of relocation service which will be offered them. Services to be described will include housing counselling, assistance in applying for federally-assisted mortgages or rental housing, inspection of housing to insure that it meets housing codes, and referrals to suitable affordable housing in locations of their choice. Relocation services will be provided either by Tent City, with the Boston Redevelopment Authority responsible for monitoring or by the BRA directly. A copy of the infromational material will be forwarded to HUD when it is completed.

The level and type of services and payments will conform to provisions of the Uniform Relocation Act and Chapter 79A, M.G.L. These will also be described in the brochure, including where applications for payment will be available, eligibility criteria, where to obtain assistance, and where and how to file payments.

Similarly, dislocation impacts to existing businesses will be mitigated through a relocation program. The BRA guidelines for business relocation are included within the Tent City UDAG application. Features of the guidelines include assistance in finding a new location, moving expense reimbursement, procedural information assistance, and loan opportunities for small businesses.

The relocation of existing jobs (six) will be offset by the creation of a greater number of permanent jobs (25) and temporary construction jobs (417). Additionally, the Tent City Corporation, the BRA, and the Neighborhood Development and Employment Agency have entered into an Employment Initiative Agreement for the Tent City development. The agreement, consistent with policies of the City of Boston, gives employment preference to residents of the City, low and moderate income

persons, minorities, and women. The following employment goals have been established for permanent jobs that will be created as the result of Tent City's development.

. Boston Resident Employees	50%
. Minority Employees	30%
. Female Employees	50%
. Low-Moderate Income Persons	50%
. Economically Disadvantaged	25%

To mitigate the loss of existing commercial uses, the approximately 7,500 square feet of proposed commercial space should be generally leased to businesses which serve neighborhood needs (i.e., convenience stores, personal service businesses, etc.)

3.2 AESTHETIC AND VISUAL QUALITY

3.2.1 Existing Conditions/Affected Environment

The site currently is occupied by a paved, surface parking lot for 276 cars, four attached five-story brick townhouses along Columbus Avenue at the corner of Yarmouth Street, six attached brick townhouses on Dartmouth Street with street level commercial uses, two attached three-story brick townhouses on Harwich Street near Yarmouth Street, and one freestanding four-story brick townhouse on Yarmouth Street. (See Figure 6). These buildings are representative of the South End's residential architecture in terms of size, scale, materials, and detailing; however, they are in poor condition and several of the building facades on Dartmouth Street have been altered significantly and damaged by fire. Also, due to previous demolitions, these buildings have been isolated from each other. The result has been a loss of the unified streetscape and the urban fabric or context at the site (see Section 3.3).

The existence of Copley Place magnifies the importance of the Tent City site as a transition zone between a modern commercial development and the historic character and residential scale of the South End. The site is an important linkage and visual connector between the Back Bay and South End, particularly as it serves to facilitate pedestrian movements along Dartmouth Street. Also, it is included in the South End State Historic District and is adjacent to the South End National Historic District. These three factors increase the site's sensitivity to visual impacts.

3.2.2 Probable Impacts

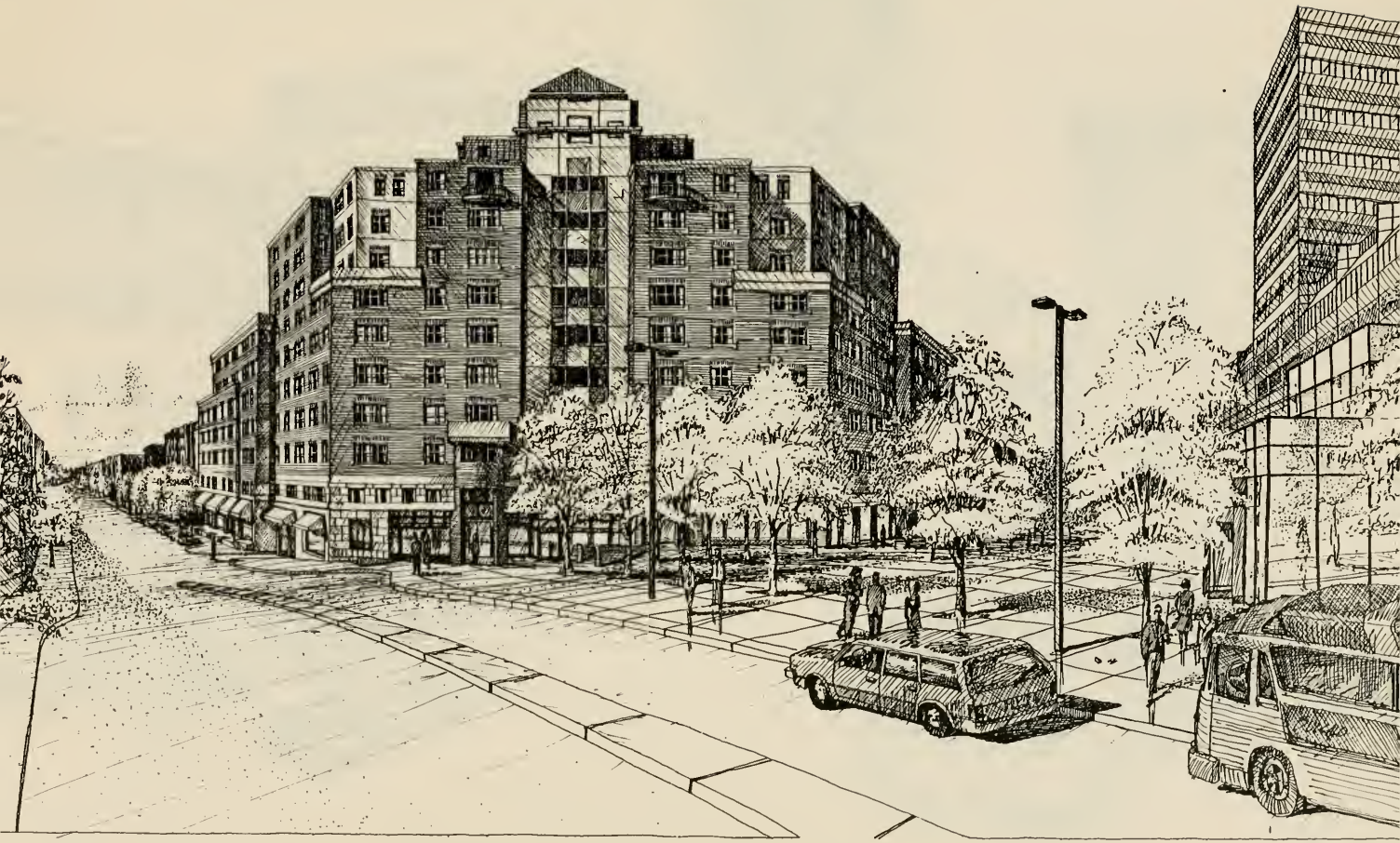
The Tent City development is designed to re-establish a compatible and consistent urban scale, fabric, texture, and streetscape along Dartmouth Street, Yarmouth Street, and Columbus Avenue, and provide a gradual design transition from the residential character of the South End to the Commercial Character of Copley Place (Figures 7 and 8).

The building massing and height configuration makes the scale transition by use of a midrise building on the northeast portion of the site. This midrise building steps down from a 10-story component to eight, six, and four-story components along 200 feet of Dartmouth Street, and to an eight and six-story component along the northern portion of the site facing Copley Place (Figure 9). The four-story scale of the project is maintained from the mid-point of the site's Dartmouth Street frontage throughout the rest of the development, particularly along Columbus Avenue and Yarmouth Street.

Moreover, the Boston Landmarks Commission study "The South End - District Study Committee Report" (1983) calls for development on the Tent City site to "provide a transition between the height of adjacent South End row houses and the height of the Copley Place project along the Southwest corridor deck.

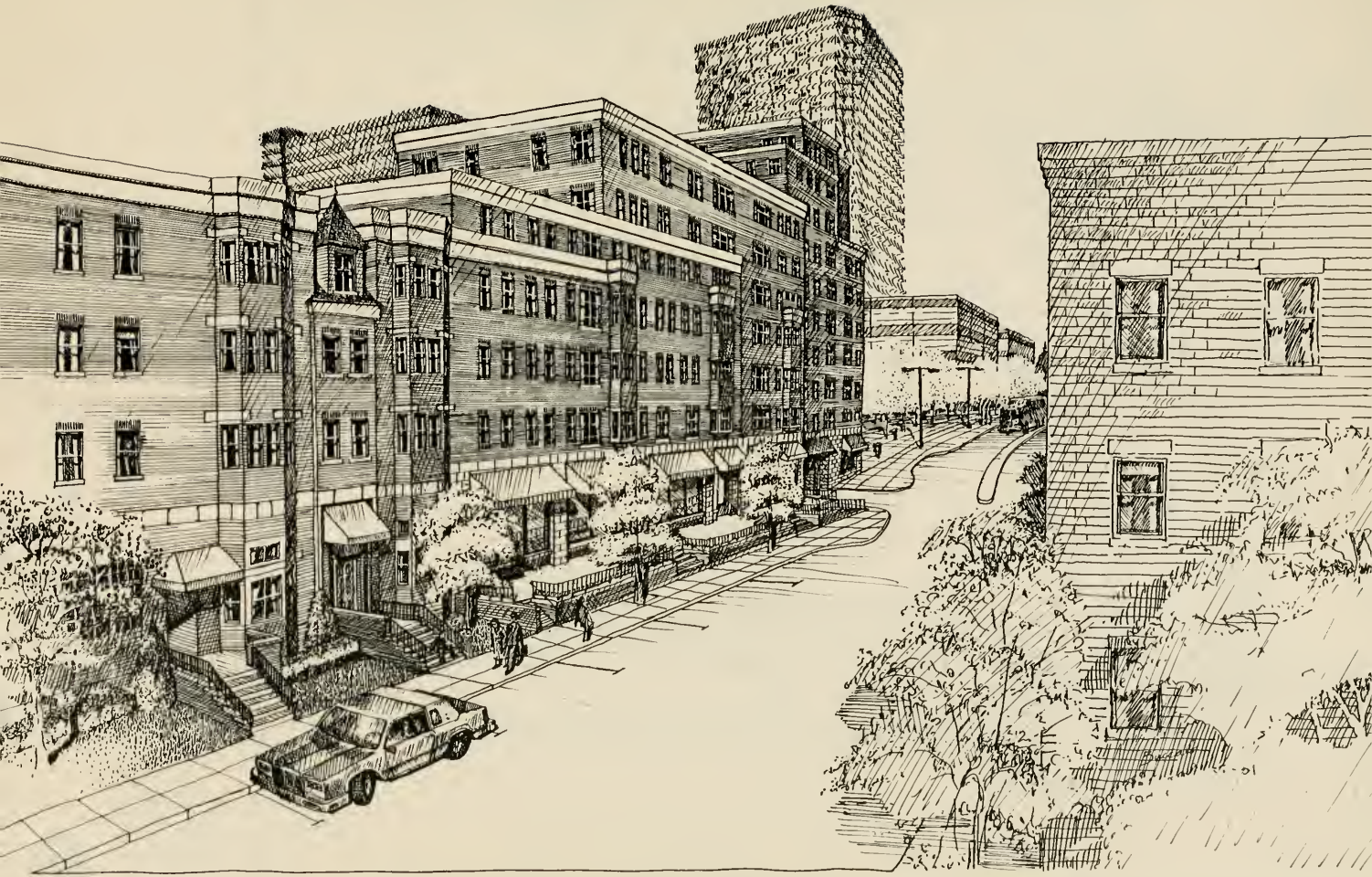
Tent City
Boston, Massachusetts
FIGURE 6

Existing Site Conditions



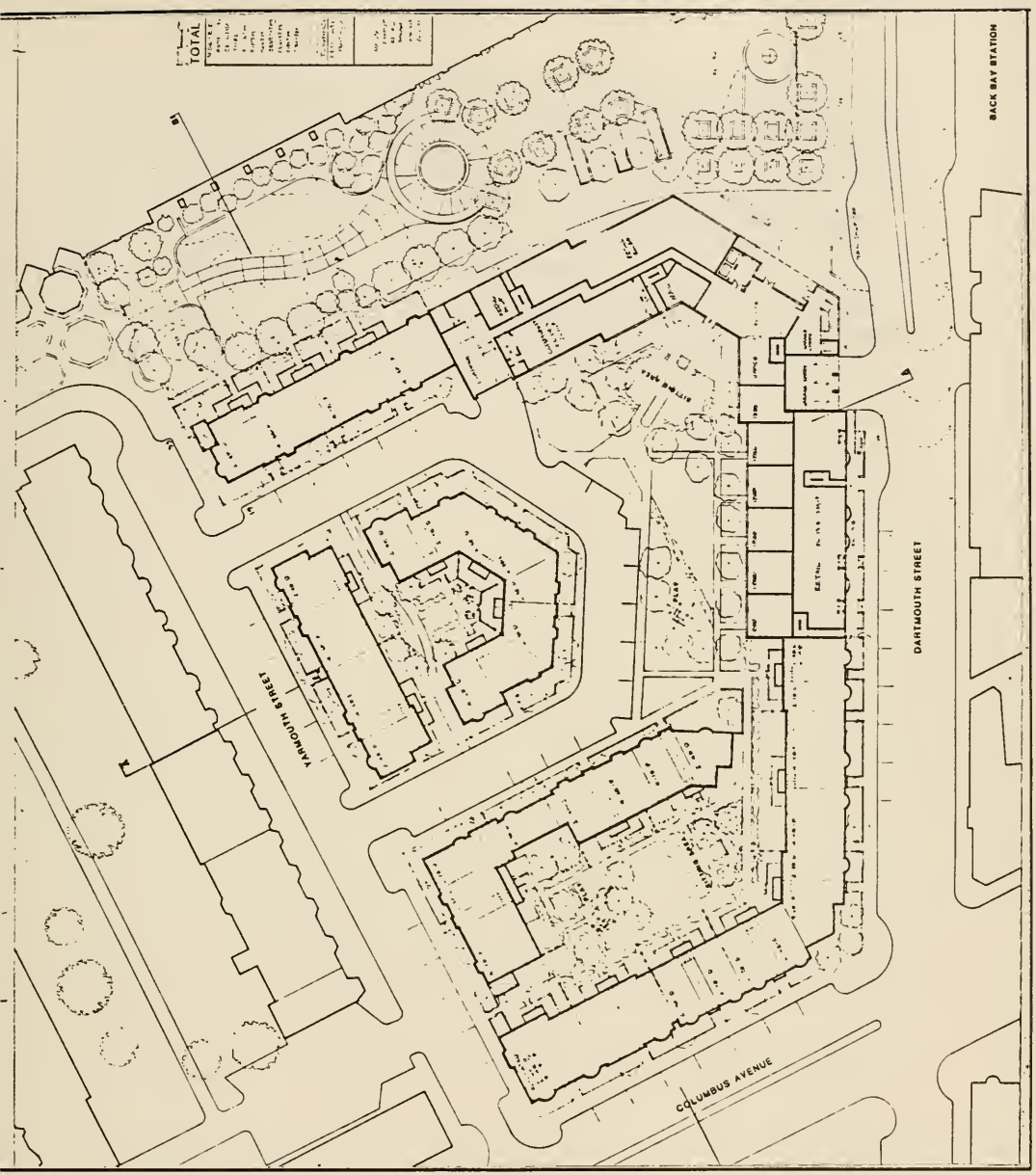
Tent City, Dartmouth Street Looking South

Figure 7



Tent City, Dartmouth Street Looking North

Figure 8



Tent City
Boston, Massachusetts
FIGURE 9
Ground Floor Plan

Scale in feet Approx.
0 100 200

Sasaki Associates, Inc. Watertown, Massachusetts

The proposed facade design and selection of related materials are intended to identify the project as a new structure while complementing the surrounding historic character of buildings on Dartmouth Street, Yarmouth Street, and Columbus Avenue. The architectural elements which have been incorporated in the design to achieve compatibility include bow front windows, elevated door entrances, roof ornamentation, and continuous cornice lines. Furthermore, the project will restore the four-story rowhouse streetscape along Yarmouth Street, Columbus Avenue, and the southeast portion of Dartmouth Street.

Although the development is primarily outwardly-focused, it will have several inwardly-focused courtyards for recreational use, and a passenger dropoff area at the courtyard entrance to the mid-rise building.

3.3 CULTURAL RESOURCES

3.3.1 Existing Conditions/Affected Environment

Archaeological Resources

Based on a review of the logs subsurface borings drilled at and in the immediate vicinity of the site, it is the opinion of the City of Boston's Archaeologist that it is unlikely that significant archaeological resources will be disturbed by this project (Appendix 3). No evidence of the Boylston Street Fishweir was observed in the borings.

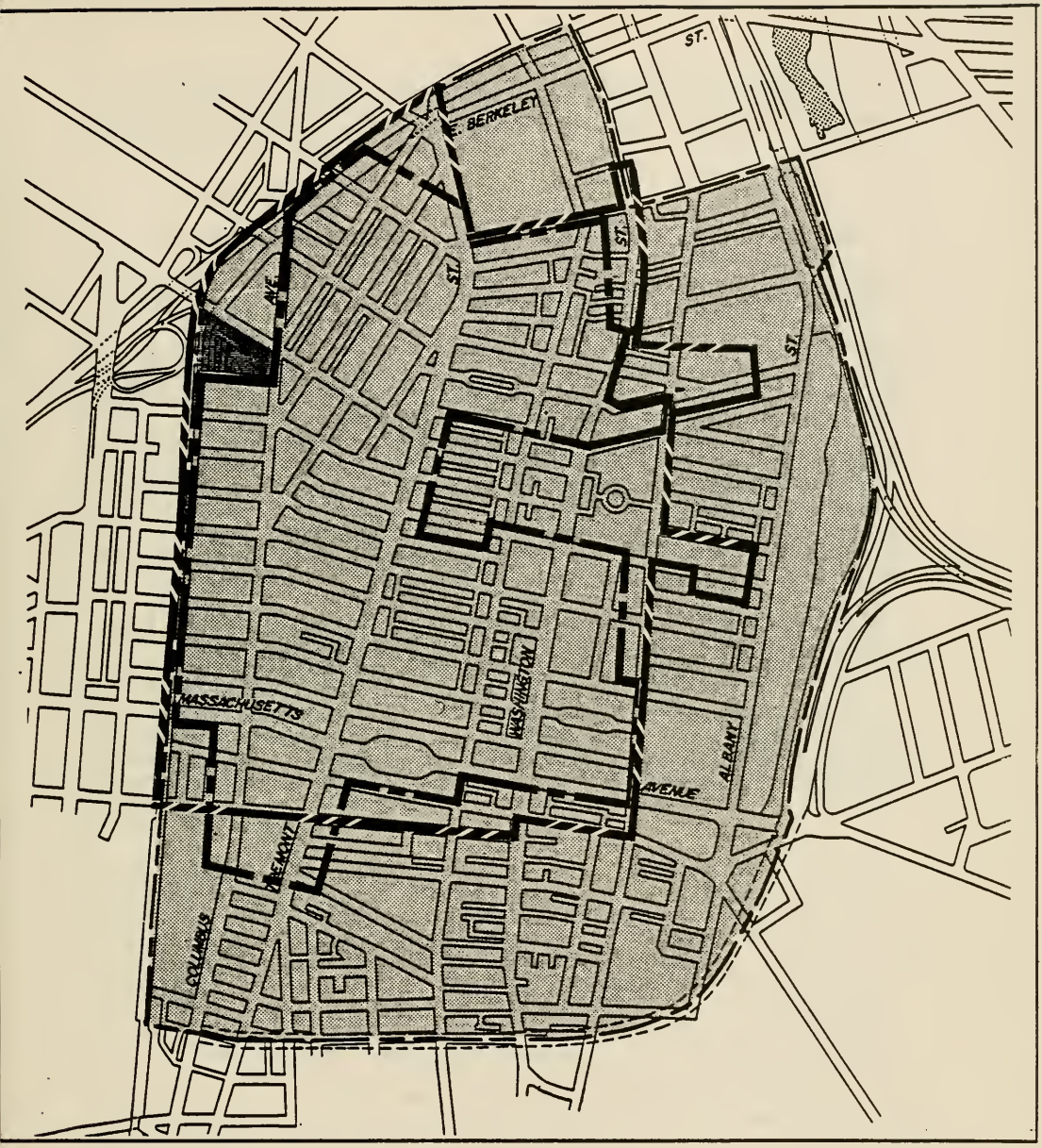
Historic Resources

The South End Historic District or South End neighborhood consists of 238 acres which have been listed on the National and State registers of historic places. The district is defined roughly as the South Bay area between Huntington and Harrison Avenues. The boundaries of the National and State register districts are shown in Figure 10.

Active development and construction in the area began after 1850, primarily on filled land. The city auctioned much of the land and set guidelines on height, building materials, setbacks, building massing, and construction scheduling. Much of the land was purchased by real estate entrepreneurs who developed the blocks as speculative row housing. The physical urban pattern is reminiscent of London's squares of town housing surrounding oblong parks. Two house building types predominate: the double basement, bow or angle bay-fronted row house with mansard roof or prominent projecting cornice (usually constructed of brick) and the low basement, flat-fronted row house faced with brick. Within these building types, the predominent architectural styles include Greek Revival, Renaissance Revival, Second Empire, and, by far the most prevalent, Italianate. Today, the South End is the largest extant Victorian, urban residential neighborhood in the United States. It still complies with the following description written by Walter Muir Whitehill. "Beginning with the fifties it rapidly grew into a region of symmetrical blocks of high-shouldered, comfortable red brick or brownstone houses, bow-fronted and high-stooped, with mansard roofs, ranged along spacious avenues, intersected by cross streets that occasionaly widened into tree shaded squares and parks, whose central gardens were enclosed by neat cast iron fences."

The dominant architectural feature of the South End Historic District is the mid-19th century row house block. Houses appear relatively uniform in size, material and style, with the individuality of the unit being subordinate to the harmony of the streetscape. The district is punctuated with gaps and vacant lots whose voids are exaggerated because of this established harmony.

The Tent City site is situated on the northerly edge of the South End Historic District, adjacent to the original rail lines which cut the neighborhood off from proximity to the Back Bay. The site is a keystone



Project Site

BRA Planning District 6

National Register Historic District

South End Landmark District and State Register Historic District

Scale in feet

0 900 1800

Tent City
Boston, Massachusetts

FIGURE 10
HISTORIC DISTRICT BOUNDARIES

Sasaki Associates, Inc. Watertown, Massachusetts

in the Dartmouth Street Corridor, a striking and important gateway to the South End Historic District. Nevertheless, with the demolition of buildings on the site in the 1960's, the site lost its sense of historic and architectural cohesiveness and context.

3.3.2 Probable Impacts

Four, freestanding buildings or groups of buildings exist on the site in staccato isolation to the surrounding neighborhood. These structures front on Harwich Street (two buildings), Yarmouth Street (one building), Columbus Avenue (four buildings), and Dartmouth Street (six buildings).

Harwich Street - Two attached, three-story (with raised basement) brick, angle bay-fronted row houses, circa 1875, front on Harwich Street. These buildings, though relatively intact, are isolated and totally devoid of context (Figure 11). The huge scale and massing of Copley Place forms an overwhelming backdrop to these freestanding houses. Due to the inappropriate location of these units in relationship to the below grade garage and the financial infeasibility of designing Tent City "around" these buildings they will be razed as part of the project and replaced with townhouse structures which will be compatible with the scale and character of the South End and the rest of the development. Moreover, these buildings are not considered to have significantly historic value.

Yarmouth Street - A single, freestanding, three-story (originally with raised basement) brick, angle bay-fronted row house, circa 1875, fronts on Yarmouth Street (Figure 12). Later, radical facade modifications have been made, (circa 1930), including a two-story projection of light-colored cementicious material embellished with stylized carved decorative panels and detail. The building is in fair condition, but its historic value is reduced due to the fragmented facade and absence of all urban or stylistic context. This building will be razed and replaced by a full block of row houses designed to mirror the existing structures located across Yarmouth Street (Figure 13).

Columbus Avenue - Four attached, brick, five-story, bow front row houses with mansard roofs front on Columbus Avenue at the Corner of Yarmouth Street (Figure 14). This group of houses is larger in scale and presence than the other building fragments remaining on the site. The two building closest to Yarmouth Street have been dramatically altered by the introduction of store fronts. The entire facade of the third building from Yarmouth Street has been lost and replaced with a five-story flat face of non-matching brick and non-aligned window openings. The fourth building from Yarmouth Street also contains a store front on the first two floors. Though altered on the first two levels, the volume and mass of these structures retain their original scale and relationship to Columbus Avenue. This block will be rehabilitated and extended along the entire length of the Columbus Avenue frontage.

Dartmouth Street - A block of six attached row houses, at numbers 108 through 118 Darmouth Street, exist along the center of the Dartmouth Street frontage (Figure 15-16). Numbers 108-110 are a pair of attached four-story (with raised basement), brownstone-faced, angle bay-fronted,

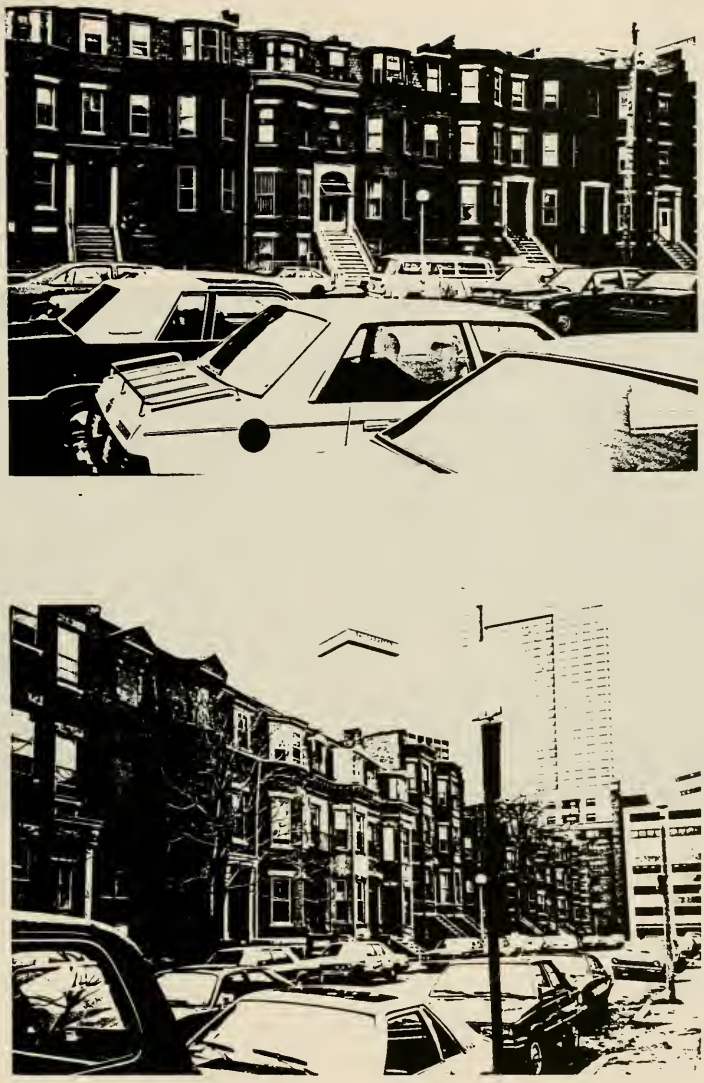
Tent City
Boston, Massachusetts

FIGURE 11

Harwich Street Buildings

Tent City
Boston, Massachusetts
FIGURE 12

Yarmouth Street Building



Tent City
Boston, Massachusetts
FIGURE 13

Adjacent Yarmouth Street Housing

Tent City
Boston, Massachusetts
FIGURE 14

Columbus Avenue Buildings

Sasaki Associates, Inc. Watertown, Massachusetts

Tent City
Boston, Massachusetts
FIGURE 15

Dartmouth Street Buildings

Tent City
Boston, Massachusetts
FIGURE 16

Dartmouth Street Buildings

row houses with mansard roofs (circa 1860). These buildings have been gutted by fire and are judged to be in such an advanced state of structural decay that rehabilitated appears to be financially infeasible. The original brownstone facade has been severely damaged by fire. Number 112 was probably a three-story (raised basement) row house similar in character to the adjacent brick-faced house at number 114. This building has been altered beyond recognition by a later, yellow brick facade and store front (circa 1930). The later addition breaks the original building line by projecting to the sidewalk's edge. Number 114 is a three-story (raised basement), brick, angle bay-fronted, flat-roofed row house (circa 1870). This building has a prominent, bracketed entry portal and corbelled brick cornice detail. It is a good, though not unique, example of the late victorian architectural style of the district. However, it is lost in context with its adjacent neighboring structures, both of which have broken the uniform building line, useage of consistent material and volume.

Number 116 has a circa 1920, full facade addition which has broken the building line by extending to the sidewalk edge. In addition to the street line rupture, the newer facade is fabricated from white face brick with a first floor storefront that has deteriorated significantly. Number 118 is a three-story, angle bay-fronted, brick row house with a raised basement. This building is similar to Number 114, and probably represents the original design of the majority of this street facade. This building has a similar corbelled brick cornice detail and prominent bracketed entry portal. Although there have been minor revisions to window openings at the basement level and some stone deterioration has occured, the building generally is well preserved. The six Dartmouth Street buildings will be demolished to allow construction of the stepped, transitional building design, and, to allow the optimal location of the garage entrance on Dartmouth Street from a traffic planning and impact mitigation standpoint.

It is stated in the Boston Landmarks Commission study "The South End - District Study Commission Report" (1983) that "demolition of the existing properties on Darmouth Street may be considered if required to develop a sound over-all site plan".

3.3.3 Mitigation Measures

The proposed project will result in the replacement of the existing fragmented and deteriorating facades with a new structure which will re-establish the historic streetscape and provide a gradual design transition between the South End Historic District and Copley Place/Copley Square area. The four structures fronting on Columbus Avenue will be renovated and their design re-interpreted along Yarmouth Street, continued on Columbus Avenue and along Dartmouth Street.

The proposed facade design, volume and building materials for these new street frontages will be compatible with the typical existing streetscape of the surrounding South End District. The proposed Tent City project attempts to restore the integrity of the site's historic design by re-establishing context with the Historic Fabric of the South End District.

3.4 WIND AND SHADOW

3.4.1 Existing Conditions/Affected Environment

Winds

The results of an analysis of the wind impacts associated with the construction of Copley Place revealed that effective gust velocities within the Southwest Corridor, between the Tent City site and Copley Place, may reach 13.7 meters per second (mps) during the winter (HMM Associates, Inc. 1980). This wind speed is associated with a moderate gale which may impede sensitive activities such as pedestrian movements. The excessive gusts predicted within the Southwest Corridor were associated with winds from the south-southeast through southwest azimuths (Bolt, Beranek and Newman 1980). No other locations in the vicinity of the Tent City site were found to be subject to significant wind impacts from Copley Place.

Shadows

The Tent City site is currently used primarily as a surface parking lot which does not cause any shadows. The four groups of existing three and four story buildings scattered across the site have a minor shadow impact on the surrounding area. The existing building will be replaced by housing units of a comparable scale and height. Because of the small number of buildings currently on the site and their dispersed site locations the shadows from these buildings are not presented. Moreover, these buildings will be replaced by housing units of a similar scale and height at their same approximate location that will result in comparable shadow impact as seen in the accompanying shadow illustrations.

3.4.2 Probable Impacts

Winds

It is anticipated that the general roughness and massing of the Tent City development will reduce the wind speeds within the Southwest Corridor associated with winds from the south-southeast through southwest directions (Bolt, Beranek and Newman 1980). Therefore, the Tent City development may help to reduce to acceptable levels the wind impacts associated with Copley Place in the vicinity of the site. (Acceptable wind velocities are considered to be speeds below 13.6 mps, the criterion adopted by Bolt, Beranek and Newman (1980).

Shadows

Shadows cast by the proposed Tent City project are presented for the area immediately surrounding the site including the Southwest Corridor deck to the northwest, Dartmouth Street to the east, Columbus Avenue to the southeast, and Yarmouth Street to the southwest.

Spring and Fall Equinoxes (March 21 and September 21)

Shadow conditions at the spring and fall equinoxes are identical. The equinox condition depicts the average shadow to be expected during the majority of the year. The impacts from shadows cast by Tent City and surrounding buildings are described below and represented for 9:00 AM, 12:00 PM and 3:00 PM in Figures 17-19.

. Southwest Corridor Deck

The deck will be predominantly in shadow from Tent City only during the early morning hours (9:00 AM). By noontime the shadows will be ±30-60 foot and confined primarily to the section of the deck adjacent to Dartmouth Street. In midafternoon (3:00 PM) the project will have no shadow impact on the deck. (See Figure 17).

. Dartmouth Street

The project will cast ±15-35 foot shadows on the Tent City side of Dartmouth Street at noontime and ±70-150 foot shadows across Dartmouth Street in the mid-afternoon (3:00 PM). (See Figure 19).

. Columbus Avenue

The project will result ±10-15 foot shadows along the sidewalks on the Tent City side of Columbus Avenue in the mid-afternoon (3:00 PM). (See Figure 19).

. Yarmouth Street

The project will result in ±10-15 foot shadows at certain points along the sidewalks on the Tent City side of Yarmouth Street in the morning (9:00 AM). (See Figure 17).

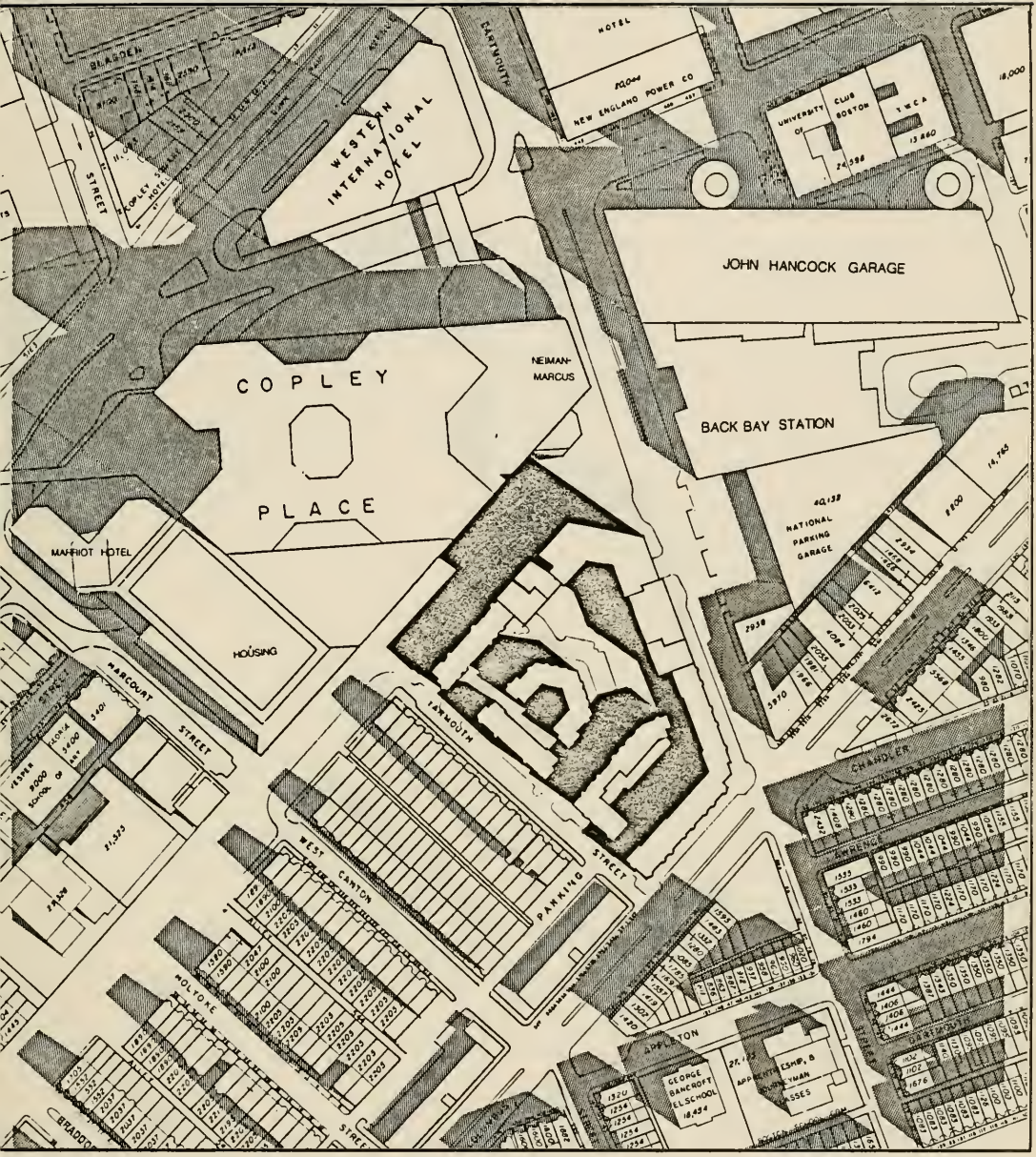
Summer Solstice (June 21)

At the summer solstice, the sun is at its highest position and shadows are shorter than at any other time of the year.

. Southwest Corridor Deck

The midrise portion of the project will cast ±80 foot shadows across a portion of the deck in the morning (9:00 AM) and a ±30 foot shadow from the four story portion of the project facing the deck. (See Figure 20).

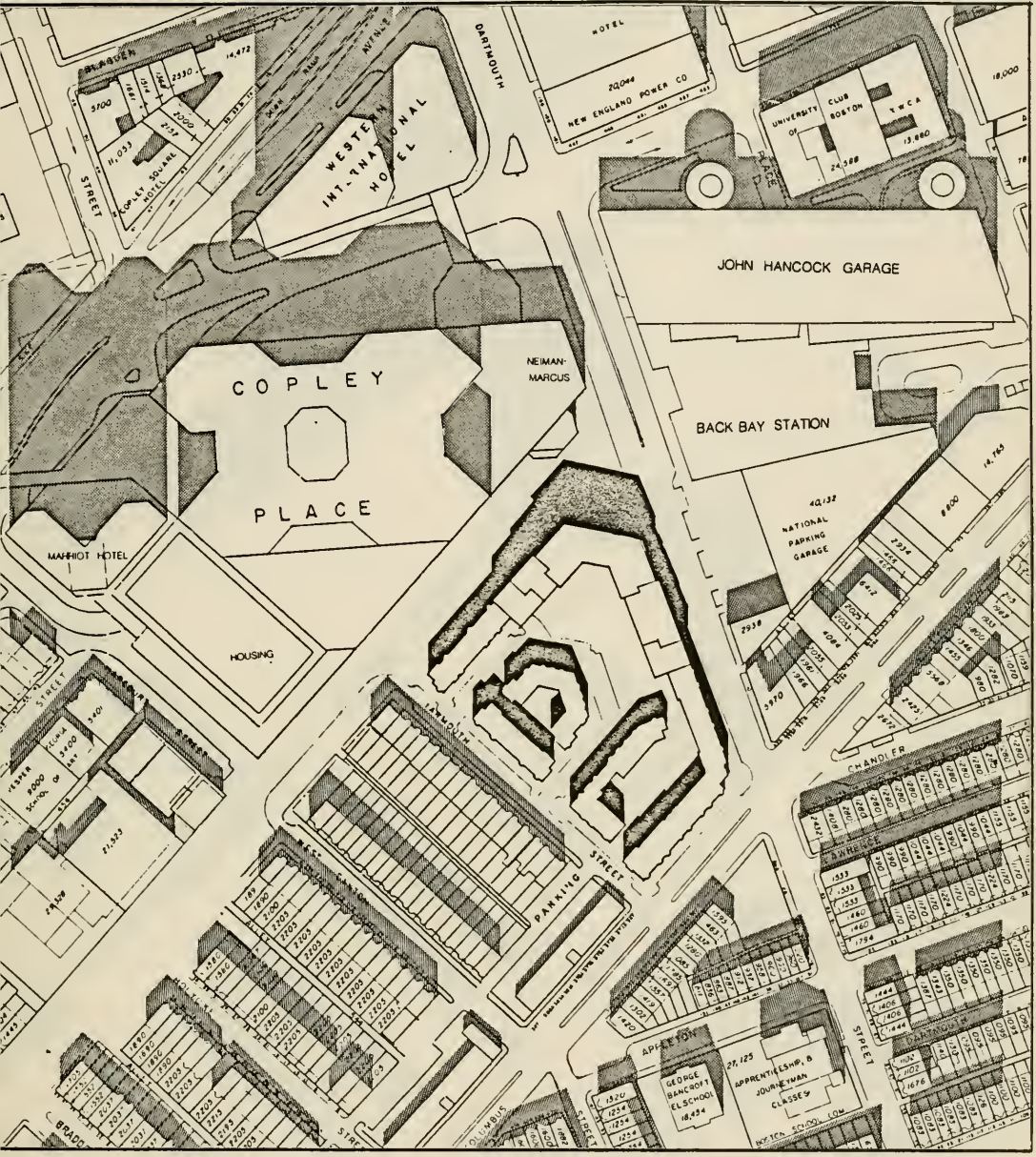
At noontime the project will cast ±15-25 feet shadows along the deck and a ±35 foot shadow from the midrise entrance towards Dartmouth Street. (See Figure 21).



Tent City
Boston, Massachusetts
FIGURE 17
Shadow Study Sep/Mar 21, 9am

Scale in feet
0 200 400

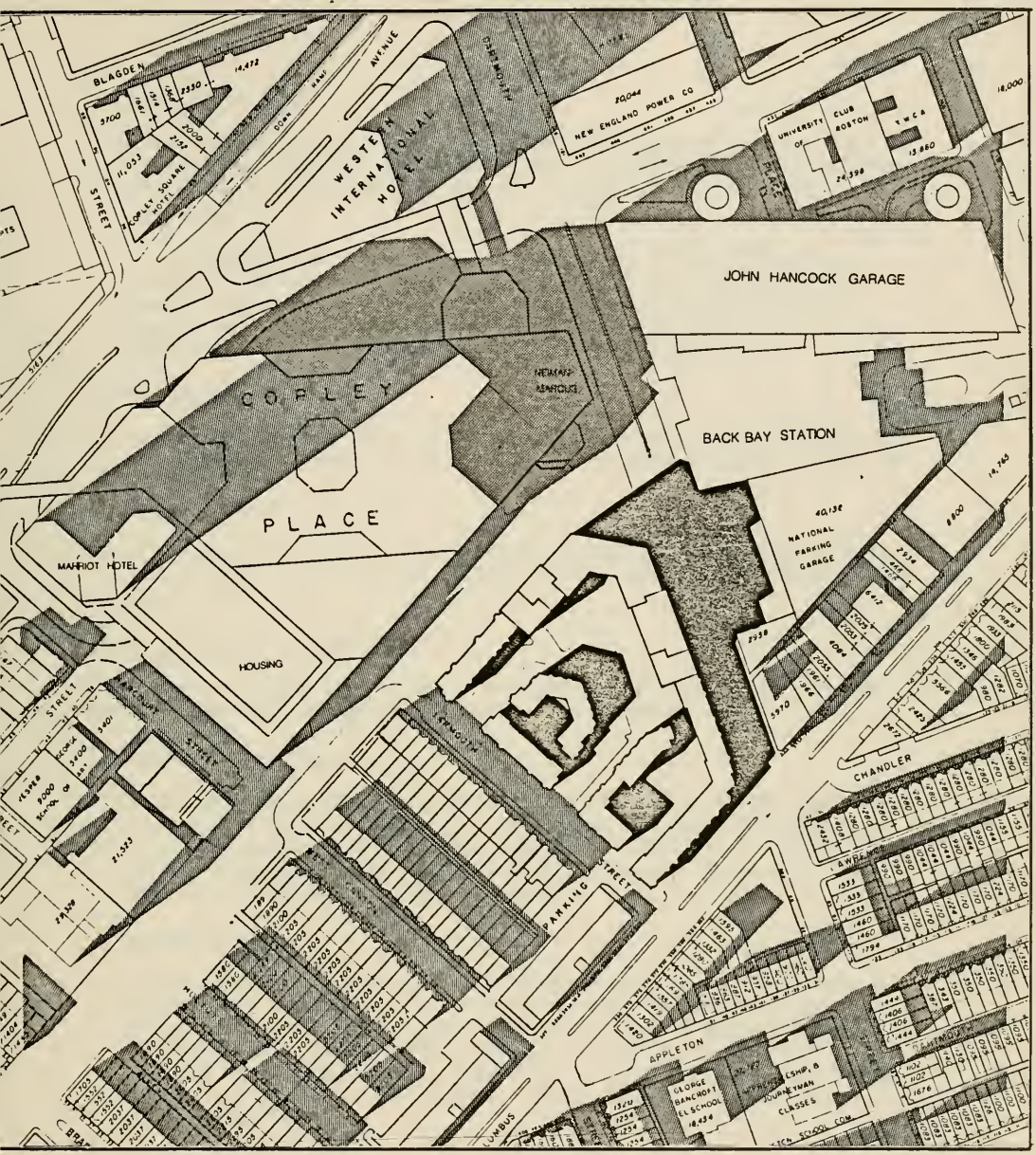
Sasaki Associates, Inc. Watertown, Massachusetts



Tent City
Boston, Massachusetts
FIGURE 18
Shadow Study Sep/Mar 21, Noon

Scale in feet
0 200 400

Sasaki Associates, Inc. Watertown, Massachusetts



Tent City
Boston, Massachusetts
FIGURE 19
Shadow Study Sep/Mar 21, 3pm

Scale in feet
0 200 400

Sasaki Associates, Inc. Watertown, Massachusetts

. Dartmouth Street

At noontime the project will cast ±5-10 foot shadows onto the Tent City side of Dartmouth Street which will fall only on the front yards of the four story townhouses and will not affect the sidewalks. (See Figure 21).

In the midafternoon (3:00 PM) the project will cast ±30-80 foot shadows. The four story units facing Dartmouth Street will cast shadows across the sidewalk on the Tent City side of Dartmouth Street, and, the midrise portion will case shadows across all of Dartmouth Street and adjacent sidewalks. (See Figure 22).

. Columbus Avenue

In the midafternoon (3:00 PM) the units fronting Columbus Avenue will cast ±20 foot shadows across the adjacent sidewalks. (See Figure 22).

. Yarmouth Street

In the morning (9:00 AM) the Yarmouth Street units will cast ±15-20 foot shadows across various portions of the adjacent sidewalks. (See Figure 20).

Winter Solstice (December 21)

At the winter solstic the sun is at its lowest position in the sky, and shadows are longer than at any other time of the year.

. Southwest Corridor Deck

In the morning (9:00 AM) the entire deck will be in shadow from the project. At noontime the project will cast ±60-110 foot shadows across the majority of the deck. In the afternoon (3:00 PM) only the Dartmouth Street entrance to Tent City and a small portion of the deck will be in shadow. (See Figure 23).

. Dartmouth Street

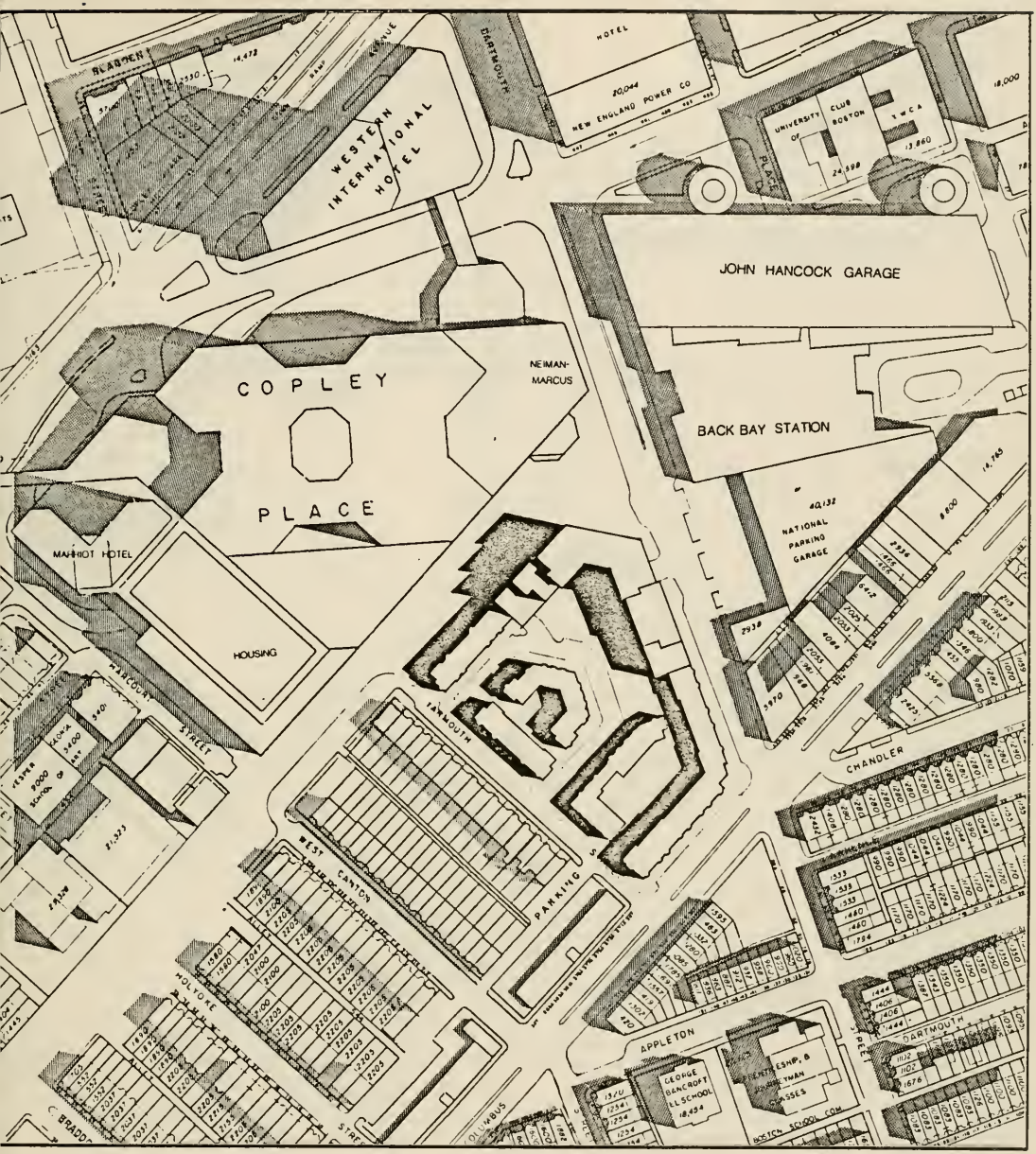
At noontime the project will cast ±30 foot shadows onto most of the sidewalks on the Tent City side from the four to six story units. The midrise portion will cast +70-220 foot shadows across most of Dartmouth Street between Neiman-Marcus and the Dartmouth Street entrance to Tent City. (See Figure 24). In the midafternoon (3:00 PM) the project will cast shadows entirely across Dartmouth Street. (See Figure 25).

. Columbus Avenue

There will be no shadow impacts on Columbus Avenue from the project. (See Figures 23-25).

. Yarmouth Street

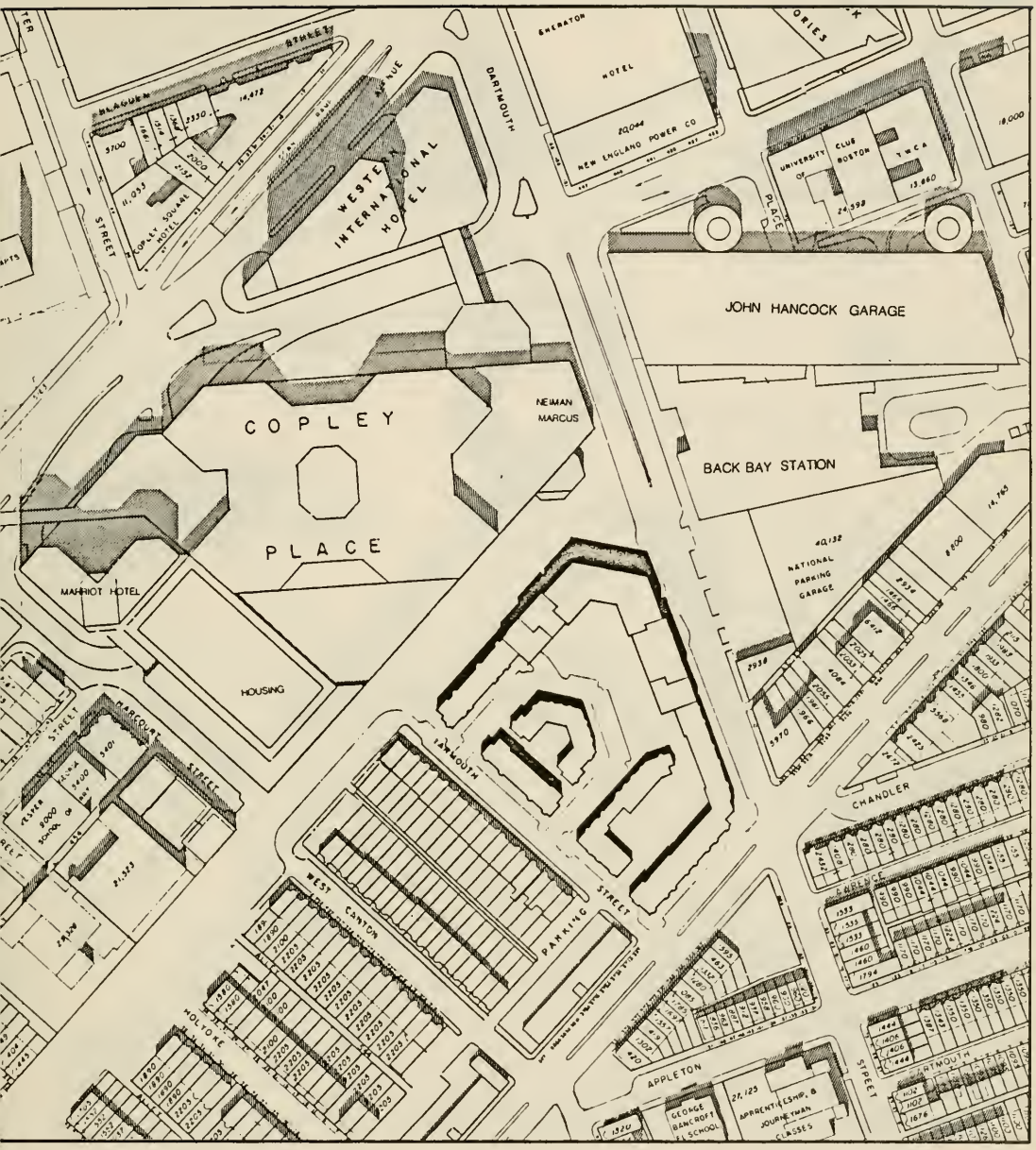
There will be no new shadows on Yarmouth Street resulting from the project. (See Figures 23-25).



Tent City
Boston, Massachusetts
FIGURE 20
Shadow Study June 21, 9am

Scale in feet
0 200 400

Sasaki Associates, Inc. Watertown, Massachusetts



Tent City

Boston, Massachusetts

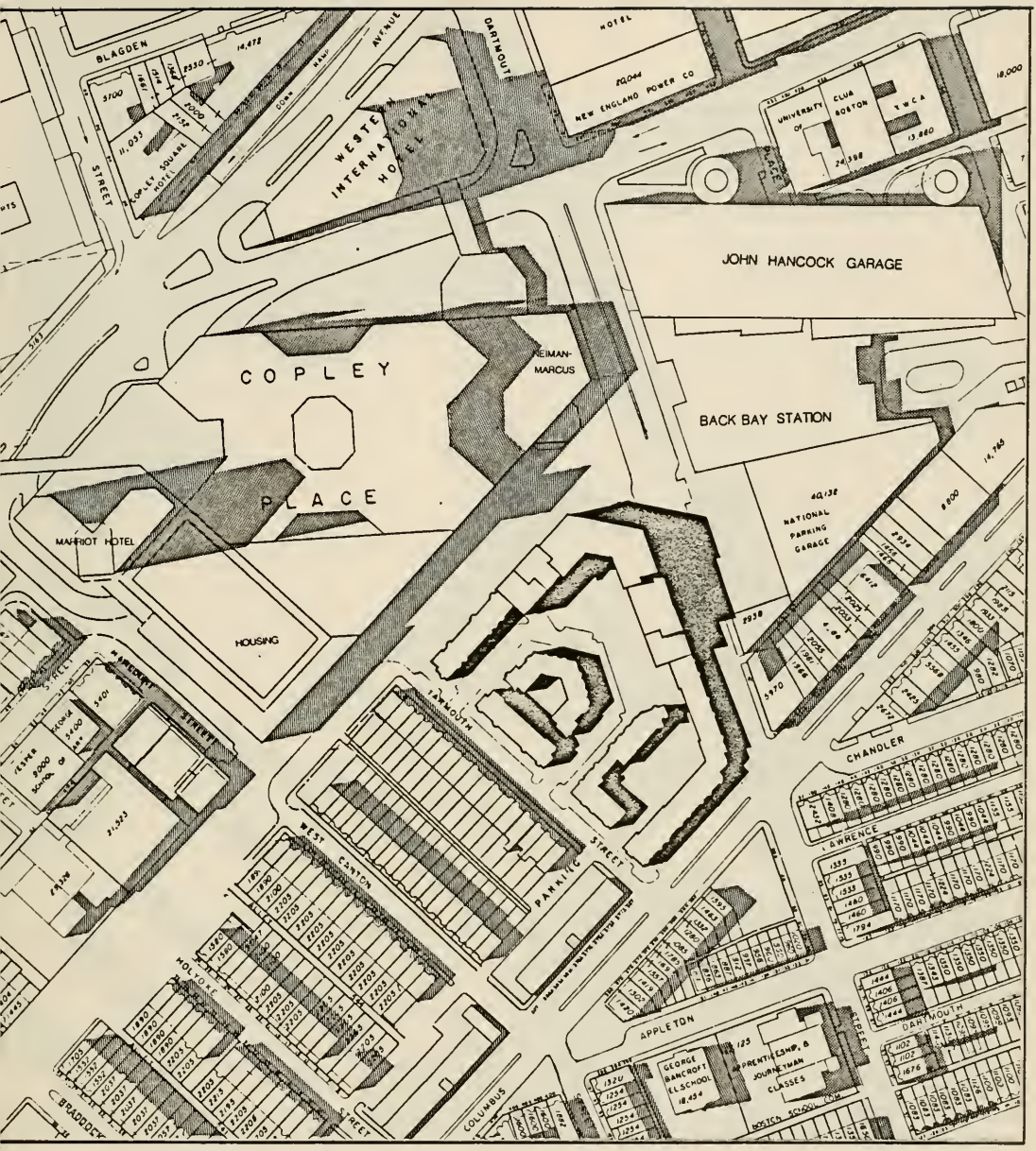
FIGURE 21

Shadow Study June 21, Noon

Scale in feet

0 200 400

Sasaki Associates, Inc. Watertown, Massachusetts



Tent City
Boston, Massachusetts

FIGURE 22
Shadow Study June 21, 3pm

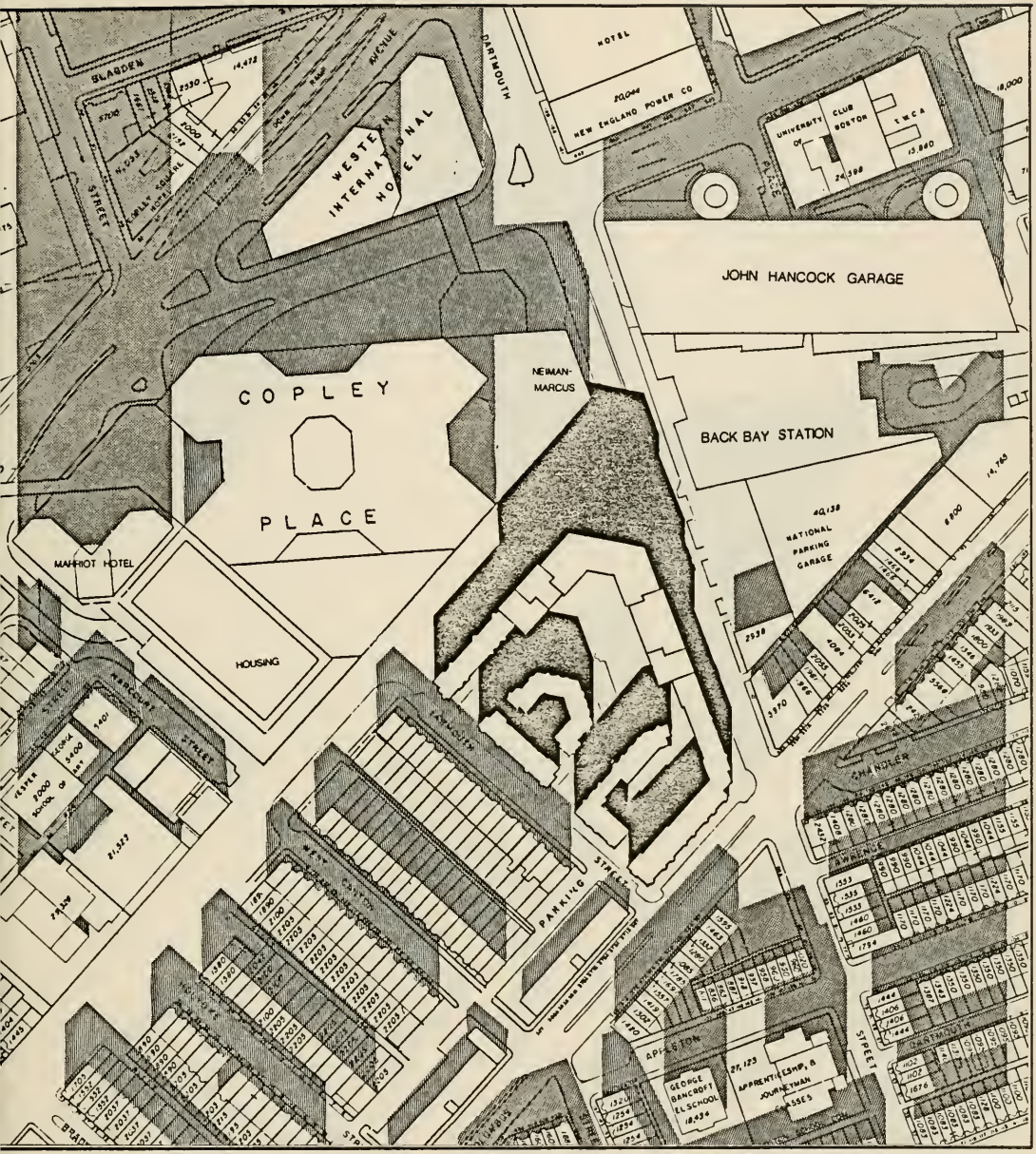
Scale in feet
0 200 400

Sasaki Associates, Inc. Watertown, Massachusetts

Tent City
Boston, Massachusetts
FIGURE 23
Shadow Study Dec 21, 9am

Scale in feet
0 200 400

Sasaki Associates, Inc. Watertown, Massachusetts

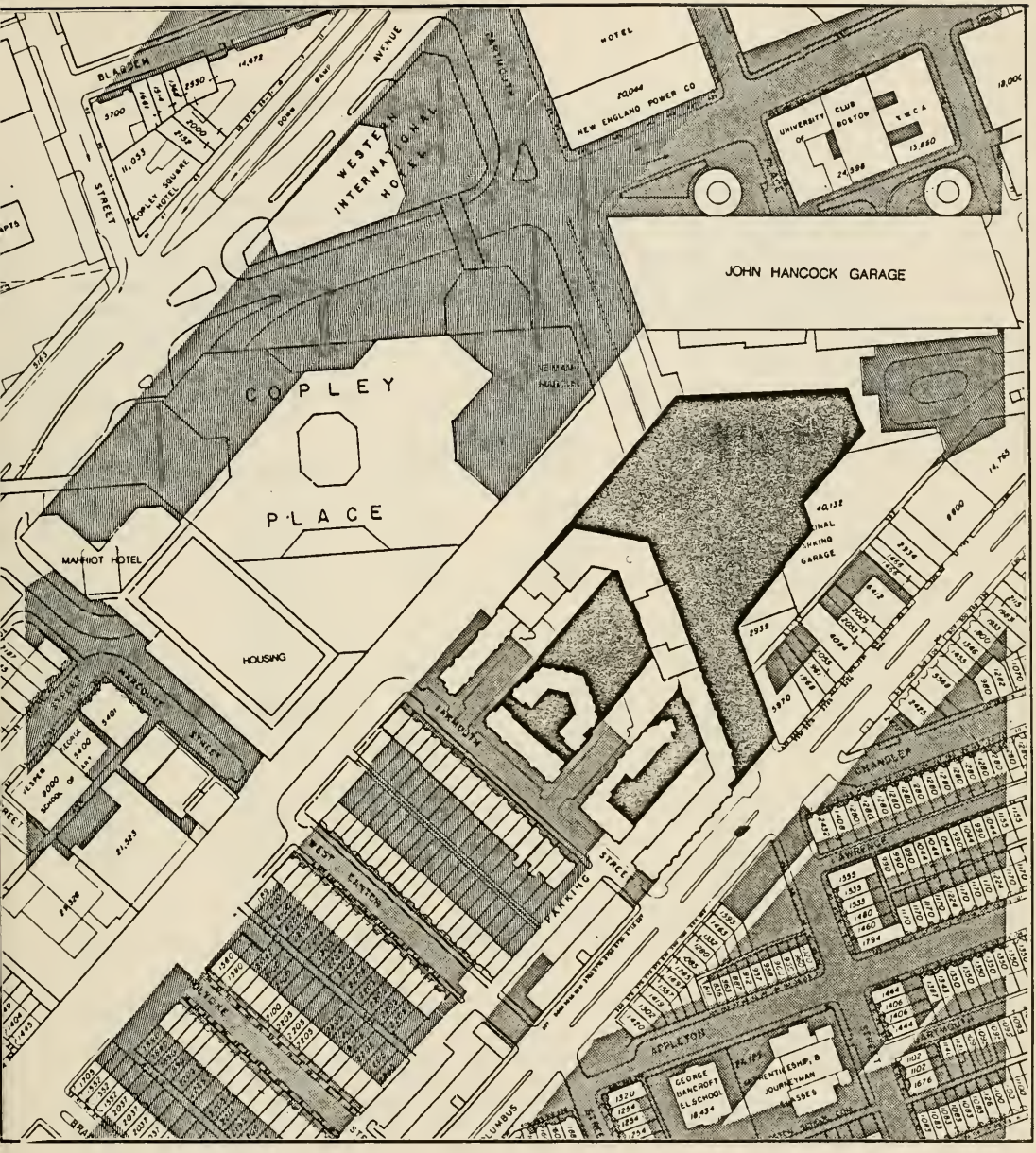


Tent City
Boston, Massachusetts

FIGURE 24
Shadow Study Dec 21, Noon

Scale in feet
0 200 400

Sasaki Associates, Inc. Watertown, Massachusetts



Tent City
Boston, Massachusetts
FIGURE 25
Shadow Study Dec 21, 3pm

Scale in feet
0 200 400

Sasaki Associates, Inc. Watertown, Massachusetts

3.5 GEOLOGY AND GROUNDWATER

3.5.1 Existing Conditions

Several site-specific and adjacent subsurface boreholes, examined between 1952 and 1983, reveal the general character of the soil layers, groundwater levels, and rock type beneath the site. The locations of these boreholes are presented in Figure 26. The examination dates, maximum depths, and groundwater elevations according to the National Geodetic Vertical Datum (NGVD) and the Boston City Base datum (BCB) are presented in Table 7. Copies of each borehole log listed in Table 5 are included in Appendix 4.

Table 7. Existing Borehole Data.

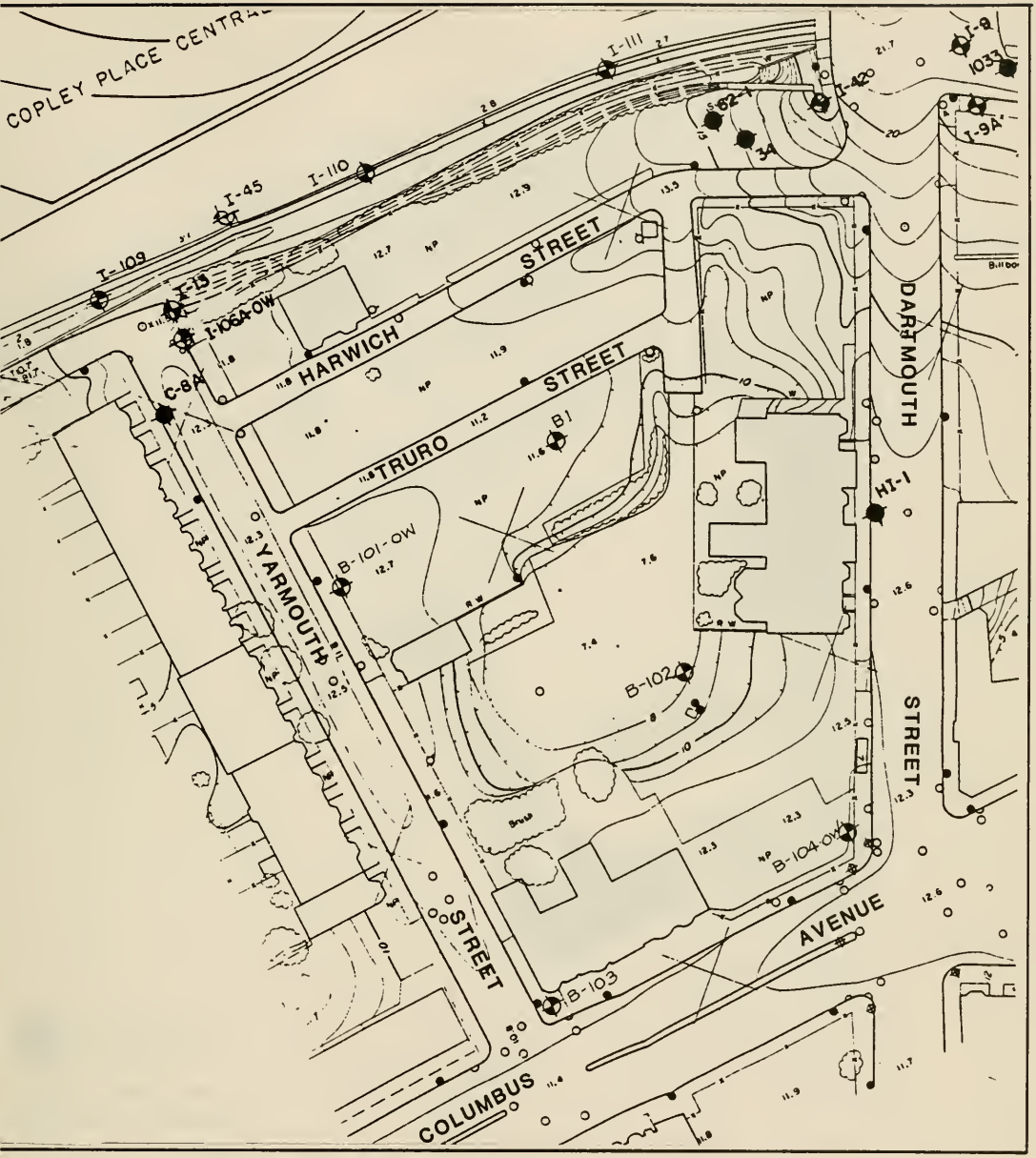
Year	Borehole #	Water Elevations NGVD	Water Elevations BCB	Maximum Depth (Feet)
1982	B-101-OW	+0.2	+5.85	47.0
	B-102	-1.6	+4.05	42.0
	B-103	+0.9	+6.55	48.5
	B-104-OW	+1.0	+6.65	116.0
	I-109	-	-	116.0
	I-110	-	-	115.75
	I-111	-	-	112.6
1979	I-42	-8.4	-2.75	68.5
	I-45	+1.3	+6.95	56.5
	I-106A-OW	+1.3	+6.95	39.0
1977	I-9A	+2.2	+7.85	135.0
	I-13	+1.6	+7.25	60.0
1977	B-1	-1.4	+4.25	117.5
1975	HI-1	-2.8	+2.85	46.5
1968	C-8A	+1.9	+7.55	20.0
1962	62-1	-0.1	+5.55	47.0
1961	34	-	-	46.0
	1033	-	-	46.0

Note: Water elevations are approximate.

Surficial Geology and Structures

The surficial geology consists of unconsolidated material, to a depth of approximately 120 feet, overlying the "Cambridge Argillite", a slaty siltstone. The deposits, from youngest to oldest, consist of sand-gravel-rubble fill, silt, peat, clay, and glacial till. A prototypical section and brief description of the soils and rock are presented in Appendix 4.

All buildings currently on the site are believed to be founded on wooden piles with stone/masonry caps. The pile supports and basement slabs of previously existing buildings will be encountered during excavation (see Figure 27).

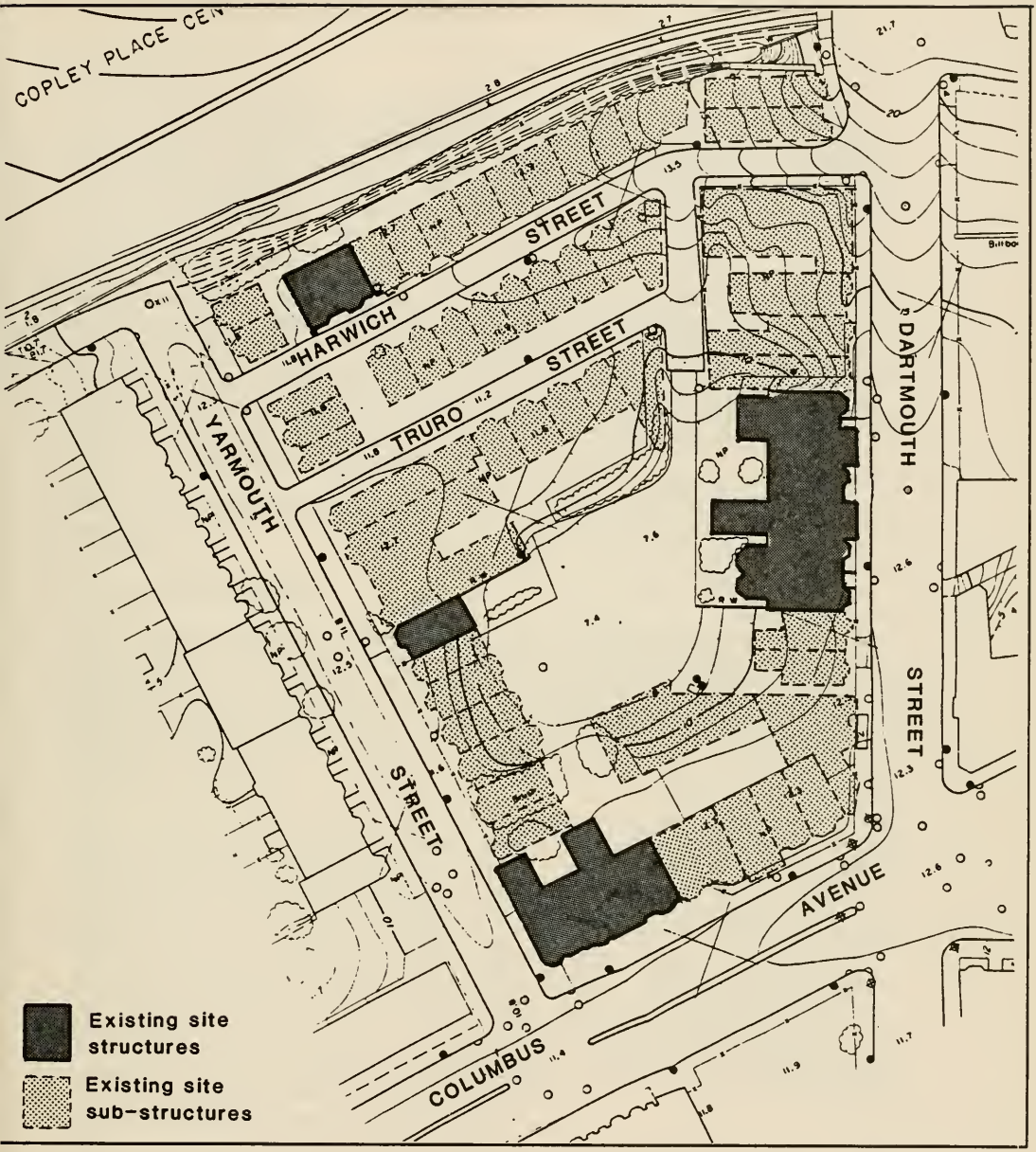


Tent City
Boston, Massachusetts

FIGURE 26
BOREHOLE LOCATIONS

Scale in feet
0 80 160

Sasaki Associates, Inc. Watertown, Massachusetts



Tent City
Boston, Massachusetts

FIGURE 27

EXISTING SITE STRUCTURES

Scale in feet

0 80 160

Sasaki Associates, Inc. Watertown, Massachusetts

Groundwater

Historically, groundwater levels at the site have fluctuated between elevations -1.5 and +3.0 (NGVD) as a result of development and leaking and ruptured water and sewer lines. However, four boreholes, conducted by Haley and Aldrich in 1983 (the most recent data), revealed the current groundwater elevation to be +1.0 (NGVD).

MBTA/AMTRAK Tunnel

The MBTA/AMTRAK Southwest Corridor tunnel is located beneath and adjacent to the site's northern boundary (see Figure 28). The corridor consists of a reinforced concrete shell surrounded by structural, pervious material. Equalization channels comprised of crushed stone have been placed along the sides and below the corridor. The channels are spaced between 50-75 feet apart and are connected laterally along the corridor. These channels serve to equalize fluctuating groundwater levels by allowing transverse directional groundwater flow.

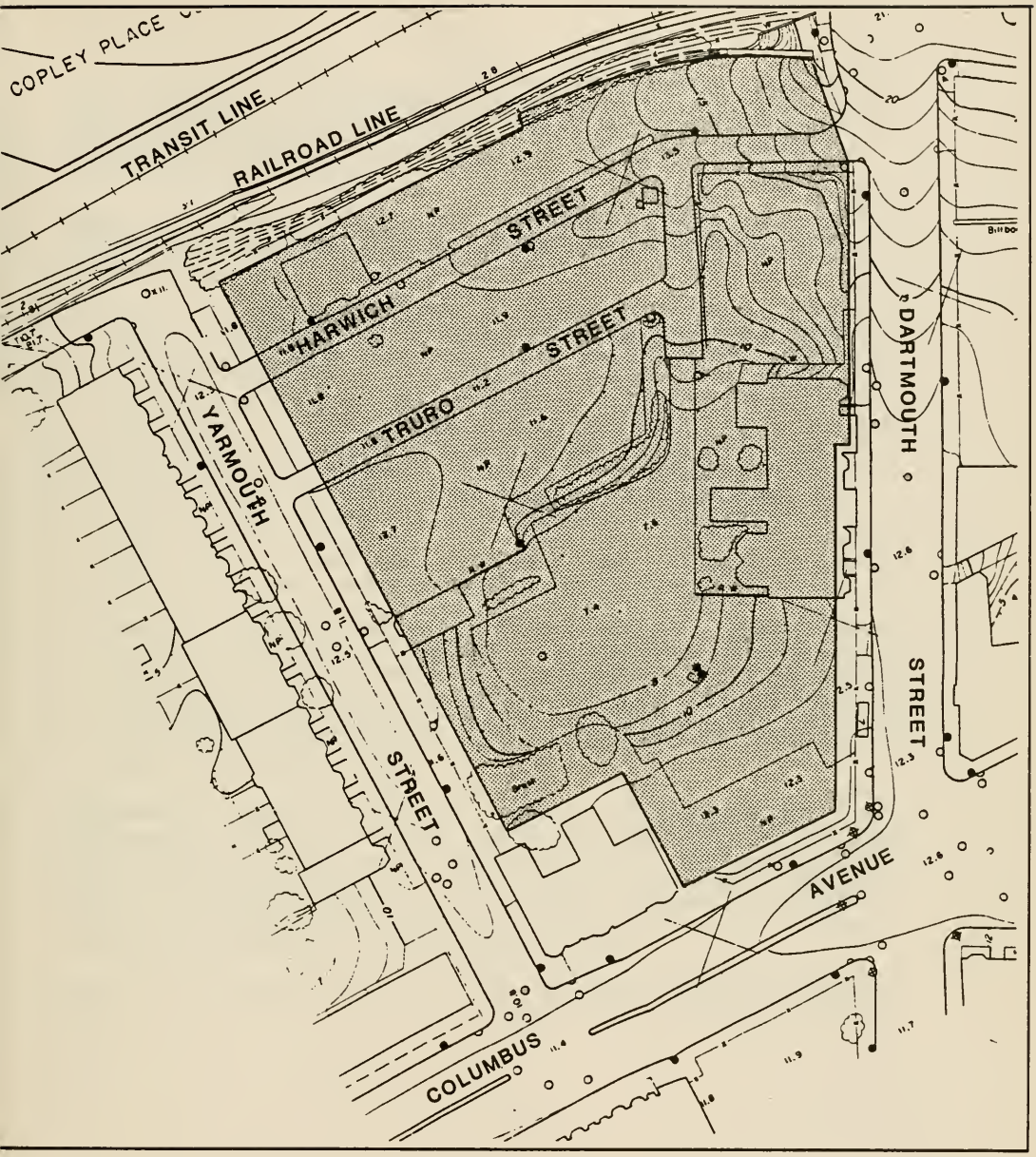
Between Yarmouth and Dartmouth Streets, the corridor is founded upon deep, pre-cast, pre-stressed, concrete end-bearing piles embedded in till or bedrock.

3.5.2 Probable Impacts

The parking garage will encompass an area of approximately three acres (Figure 28). Based on conversations with Zaldestani Inc. and Macomber Construction and a review of preliminary geotechnical reports (Haley and Aldrich 1983 and 1982), the foundation of the two-level, below grade parking garage will consist of a waterproofed floor slab placed at elevation -3.0 (NGVD) and supported upon deep, end-bearing concrete piles or belled caissons.

Construction of the garage will involve excavating the sand-gravel-rubble fill to elevation -3.0 (NGVD) and lowering the ground water table in the excavation four to six feet to elevation -3.0 to -5.0 (NGVD). Experience with previous construction projects which involved dewatering in the vicinity of the site has revealed that temporary dewatering within the upper fill stratum generally lowers the groundwater no more than one foot over a distance of 400 feet (Haley and Aldrich, 1985). Nevertheless, prolonged (generally greater than three years) or permanent dewatering may result in wooden pile deterioration and soil consolidation/heave (Haley and Aldrich, 1985). This deterioration and consolidation may induce direct, differential, and "pile drag" settlement of on-site and/or adjacent structures and utilities (Aldrich, 1979). If the dewatering is minor and of short duration, the probability of settlement or "pile drag" will be low (Haley and Aldrich, 1985).

The total depth of excavations expected is approximately 20 feet. Only the bottom four to six feet will be below the groundwater table (depending on the groundwater level at the time of construction). The proposed excavation will take approximately three months to complete.



Tent City
Boston, Massachusetts

FIGURE 28

PARKING GARAGE AREA

Scale in feet

0 80 160

Sasaki Associates, Inc. Watertown, Massachusetts

Due to the short duration of excavation and minimal depth below the water table, experience on similar projects and available documentation (as referenced above) indicates that the proposed work will not induce significant differential loading on adjacent structures or result in deterioration of wood piles.

However, in order to track the actual groundwater impacts and potential effects on adjacent wood piles the following mitigative measures are recommended.

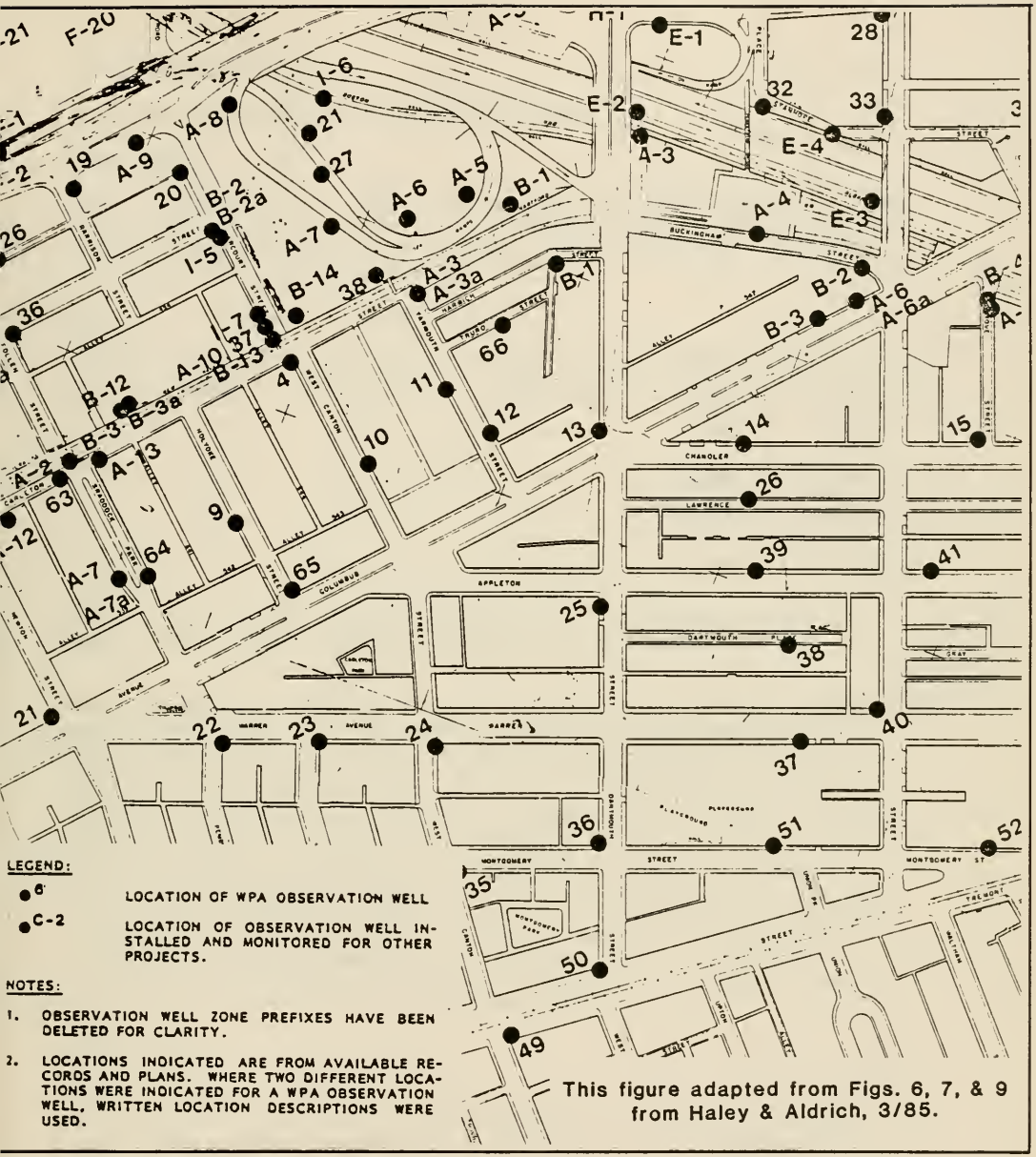
- Monitor the groundwater levels, as required, adjacent to the site. This can be accomplished by utilizing existing observation wells installed by others (Figure 29), or, by installing observation wells as may be needed to obtain sufficient groundwater level data proximate to the site. The rationale for this is that historically the cut-off elevation for wood piles in this area is elevation 0.0 to -1.0 (NGVD). Should the dewatering effort, by whatever method is employed during construction, cause a drawdown adjacent to the site such that wood pile foundations emerge from below the water table, the monitoring program will identify when this condition exists.

- The frequency of monitoring will be such that a realistic recordable groundwater trend can be determined from the data.

- Should monitoring during the course of construction indicate that the wood pile foundations are exposed to the atmosphere for a period greater than three months, it is recommended that a recharge program be implemented. This may consist of a series of injection wells or surface application provided adequate infiltration into the soil can be achieved. Such recharging has been successful when necessary (Haley and Aldrich, 1985).

Groundwater withdrawn from the site through a series of sump pumps will be pumped to a siltation settling tank/basin to remove fine material, and then discharged to the existing storm drain system. The existing storm drain system contains adequate reserve capacity to receive the amounts of water to be generated during construction (John Sullivan, Boston Water and Sewer Commission, personal communication). The expected duration of the dewatering operation is approximately one year.

Since the dewatering program is designed to maintain ambient groundwater levels, no adverse effects are expected during or after construction.


LEGEND:
LOCATION OF WPA OBSERVATION WELL
C-2
LOCATION OF OBSERVATION WELL INSTALLED AND MONITORED FOR OTHER PROJECTS.
NOTES:
1. OBSERVATION WELL ZONE PREFIXES HAVE BEEN DELETED FOR CLARITY.
2. LOCATIONS INDICATED ARE FROM AVAILABLE RECORDS AND PLANS. WHERE TWO DIFFERENT LOCATIONS WERE INDICATED FOR A WPA OBSERVATION WELL, WRITTEN LOCATION DESCRIPTIONS WERE USED.
This figure adapted from Figs. 6, 7, & 9 from Haley & Aldrich, 3/85.

Tent City
Boston, Massachusetts

FIGURE 29
VICINITY OBSERVATION WELLS

Scale in feet
0 300 600

Sasaki Associates, Inc. Watertown, Massachusetts

3.6 WATER AND SEWER

3.6.1 Existing Conditions/Affected Environment

Water Supply

Water is supplied to the site by Boston Water and Sewer Commission (BWSC) low service lines, ranging from six inches to 12 inches in diameter, and a 20-inch high service line in Columbus Avenue (Figure 30). Fire flow test data are presented in Table 8.

Table 8. Fire flow test data.

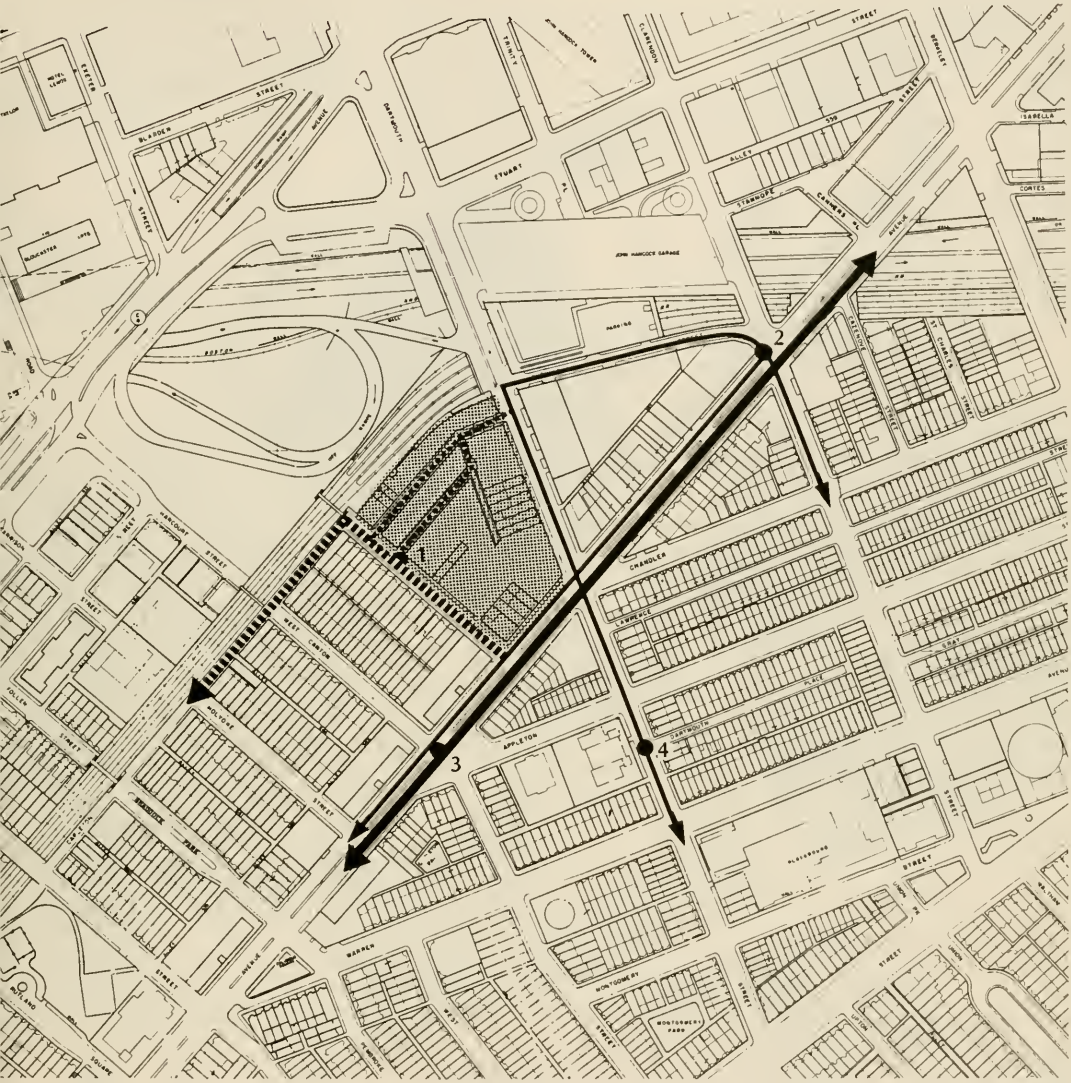
HYDRANT*	DATE TESTED	STATIC PRESSURE P.S.I.	RESIDUAL PRESSURE P.S.I.	FLOW G.P.M.	FLOW @ 20 P.S.I. G.P.M.
1	7/83	58	43	2,570	4,260
2	6/84	87	82	1,940	7,880
3	9/83	55	49	2,770	7,180
4	6/84	56	48	3,630	8,190

*Note: Hydrant test location illustrated on Figure 17.
Source: Boston Water and Sewer Commission, Flow Test Map. 1985.

The source of water for Tent City is the Metropolitan District Commission (MDC) water system. The maximum safe yield of the MDC system of 300 million gallons per day (mgd), has been exceeded consistently in recent years due to increasing demand. This demand is expected to continue to increase to levels approaching 420 mgd by the year 2020, even with additional conservation and improved management (Marcus Kempe, MDC Water Division, personal communication). Programs being considered to increase supplies include reactivation of the Sudbury Reservoir, plugging of leaks, the tapping of additional surface water resources, and adjustment of watershed management practices. (Note: It should be noted that the current water demand exceedances on the MDC system will continue regardless of the proposed Tent City project. It is not within the scope of this EIR/EIS nor within the capabilities of the Tent City project to address the overall MDC water supply situation).

Sewer Service

Sewer service is available in Yarmouth Street (with connections on-site) and Dartmouth Street/Columbus Avenue (Figure 31). Sewer lines, storm drains, and combined systems in the vicinity of the site range from 10 to 18 inches in diameter. These lines are tributary to the BWSC West Side Interceptor. This facility transports flows to the MDC Boston Main Drainage Relief Sewer which, via the Columbia Park Headworks, transports flows to the MDC Deer Island Treatment Plant. It is also important to note that the existing sewer lines servicing the site begin on, and immediately adjacent to the site.



20″ High Service Line

12″ Low Service Line

10″ Low Service Line

6-8″ Low Service Line

Hydrant Test Flow Location (1-4)

Project Site

Tent City

Boston, Massachusetts

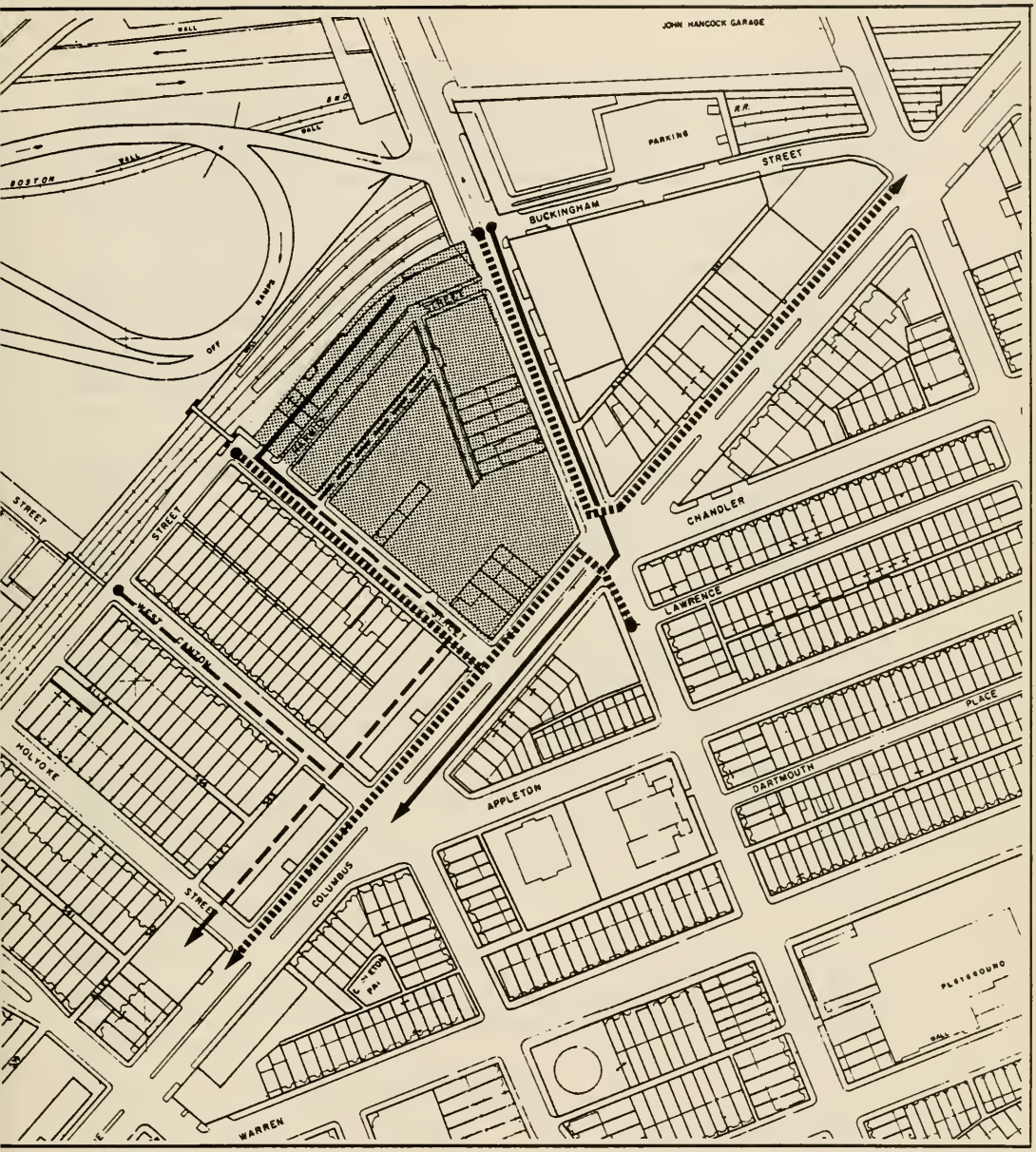
FIGURE 30

WATER SUPPLY

Scale in feet

0 400 800

Sasaki Associates, Inc. Watertown, Massachusetts



Sanitary Sewer

Combined Sewer/Storm Drain

Storm Drain

Project Site

Tent City
Boston, Massachusetts
FIGURE 31
SEWER

Scale in feet
0 200 400

Sasaki Associates, Inc. Watertown, Massachusetts

The design capacity of the MDC Deer Island Treatment Plant is 343 mgd for average daily flow and 925 mgd for peak flow. The 1984 average daily flow reported in the MDC Annual Report was 310 mgd (Ed Cartman, MDC Sewage Division, personal communication). This facility has experienced periodic problems with respect to inflow pumping capability, and is being studied for short-term operating improvements and long-term treatment alternatives.

The West Side Interceptor, a combined flow facility, has an estimated design capacity of 86 mgd. The downstream connection is the MDC Columbia Park Headworks, which acts in tandem with the MDC Ward Street Headworks to convey flows to the Deer Island Treatment Plant via the MDC Boston Main Drainage Tunnel. Daily flows through the Columbia Park Headworks were estimated at 62 mgd in 1984 (Ed Cartman, MDC Sewage Division, personal communication).

The estimated capacity of the local collection system, based on size, slope, and pipe construction, is 1.4 mgd for the Yarmouth Street line and 1.1 mgd for the Dartmouth Street line. The peak flow capacity of the system is estimated to be 1,700 gpm. Based on the present mix of residential and commercial uses and the generation rates of Title 5 of the State Environmental Code, existing sewage flows from the site are estimated to be 1,900 gpd.

It should also be noted that the sewer and water supply systems that currently serve the site at one time served a comparable number of housing units that were located on the site before their demolition. The Tent Citv proposal for ±270 units only replaces a land use that the existing water and sewer systems were originally intended to accommodate.

Approximately, 85-90% of the site consists of impervious surfaces (paved parking lot and existing rowhouses). Stormwater runoff under these conditions is estimated to be 9.5 cubic feet per second (cfs). The storm drain currently serving the site are 15-inch lines located along Yarmouth Street, Dartmouth Street and Columbus Avenue.

3.6.2 Probable Impacts

Water Supply

The future water demand of the project is estimated to be 66,720 gallons per day (gpd). Peak demand is estimated to be 231 gallons per minute (gpm) (Table 9).

Table 9. Tent City water demand estimate.

Project Component	Amount	Water Demand (gpd)
Residential	548 bedrooms	66,308
Commercial	7,500 s.f.	412
	TOTAL	66,270
	PEAK DEMAND (Factor of five times average demand)	231 gpm

The daily and peak water demands can be adequately served by the existing distribution system. Furthermore, the results of fire flow tests indicate adequate pressures. (Captain McHugh, Boston Fire Department, personal communication).

Sewer Service

The project will generate approximately 60,650 gallons of domestic sewage per day (Table 10). Peak flow is estimated to be 210 gpm.

Table 10. Tent City sewage flow estimate.

Project Component	Generation Rate*	Sewage Generation (gpd)
Residential (548 Bedrooms)	110 gpd/bedroom	60,280
Commercial (7,500 s.f.)	5 gpd/100 s.f.	375
	TOTAL	60,655
	PEAK FLOW	
(Factor of five times average flow)		210 gpm

*Source: Title 5, Massachusetts State Environmental Code.

The flows to be generated by the project amount to approximately .001 of the 1984 existing flow (i.e. one-tenth of one percent), transmitted by the MDC Columbia Park Headworks. This amount of incremental flow by itself will not cause the need for present improvement plans, timetables, or studies to be adjusted.

The extensive local collection system which begins adjacent to the site, with a capacity of 2.5 mgd, appears to be adequate to accommodate the increased domestic sewage flows.

The project will not increase the amount of existing impervious surfaces on the site and will therefore not increase the stormwater runoff from the site.

During construction, groundwater in the excavation will be discharged to the storm drain system. To facilitate removal of sediments prior to discharge all dewatering effluent will pass through an on-site filtration tank/basin. All dewatering activities will be done in accordance with the regulations of the Boston Water and Sewer Commission. The existing stormwater drainage system serving the site contains adequate reserve capacity to receive the amounts of groundwater to be generated during construction dewatering (John Sullivan, Boston Water and Sewer Commission, personal communications).

3.6.3 Mitigation Measures

Water Supply

The proposed development will be constructed in accordance with the City of Boston plumbing code. Code requirements include installation of low-flow shower heads, faucets with aerators, and other water saving devices. The 168-unit midrise component will be served by a common laundry facility which may reduce the amount of domestic water useage.

Sewer Service

Reduction in the amount of sewage flow will be addressed in the development by selecting low-flow kitchen and bathroom facility fixtures. Flow restriction devices, low-flow toilets, etc., will be used as required by the City of Boston plumbing code.

3.7 ENERGY USE AND CONSERVATION

3.7.1 Energy Use

The source of energy to be used for heating the Tent City project has not been determined at this time. This decision will be made based on the recommendations of the project's mechanical engineer who will consider the operating and maintenance costs, energy costs, conservation benefits, and capital costs of alternative systems. Although a mechanical engineer has not been retained to date, it is anticipated that the best source will be natural gas. If natural gas is used, it is anticipated that a permit may be required from the Department of Environmental Quality Engineering, Division of Air Quality Control.

The amount of energy required by the project has been estimated based on typical consumption rates for residential units and retail establishments. The anticipated energy consumption is summarized in Table 11.

Table 11. Anticipated energy consumption of the proposed Tent City project.

Energy Needs	Consumption Rate (Per Ft^2 of Building)	Anticipated Annual Consumption
Heating & Hot Water	30 BTU's/Hour(2)	8.69×10^{10} BTU's
Electricity(1)	0.0002 kwh/day B(3)	22,900 kwh

(1) Does not include consumption by air conditioners which may be installed by tenants at their option.
(2) Source: R.G. Vanderweil Associates (personal communication)
(3) Source: Rowe et al. (1978)

3.7.2 Energy Conservation Features

As the various energy systems to be incorporated into the project have not been determined, it is not possible to identify all of the energy conservation features to be included. However, at a minimum, all construction will be in accordance with the Massachusetts Energy Code, the City of Boston Building Code, and the specifications of the MHFA. At this time, it is anticipated that the following energy conservation features will be included in the project design.

- Insulation of all hot water tanks and pipes.
- Double-pane windows.
- Insulation of all outer walls and roofs (R value of 19 for walls and 30 for roofs).
- A central heating system will be designed for the mid-rise component of the development, but each unit will be zoned separately.
- The three and four bedroom townhouse units are likely to have separate heating systems and/or individual energy consumption metering.

3.8 PARKING AND TRAFFIC

Introduction

The proposed garage that is assessed as part of the Tent City project in this EIR/EIS is a two-level below grade structure with parking for 698 cars. This sized garage has been developed throughout the design of Tent City in conjunction with the residential and retail components of the project. Additionally, in order to assist the Tent City Corporation in an evaluation of the environmental and community impacts of the proposed 698-space garage, a supplemental impact analysis was conducted for a smaller 541-space garage for the project.

Although the exact allocation of parking space useage has not been finalized, the following parking space designations have been identified by Urban Investment and Development Company (UIDC) for this analysis. These represent the approximate space allocation anticipated for this site and provide the basis for the traffic volumes associated with each designation, as well as presenting the expected traffic impact upon the study area.

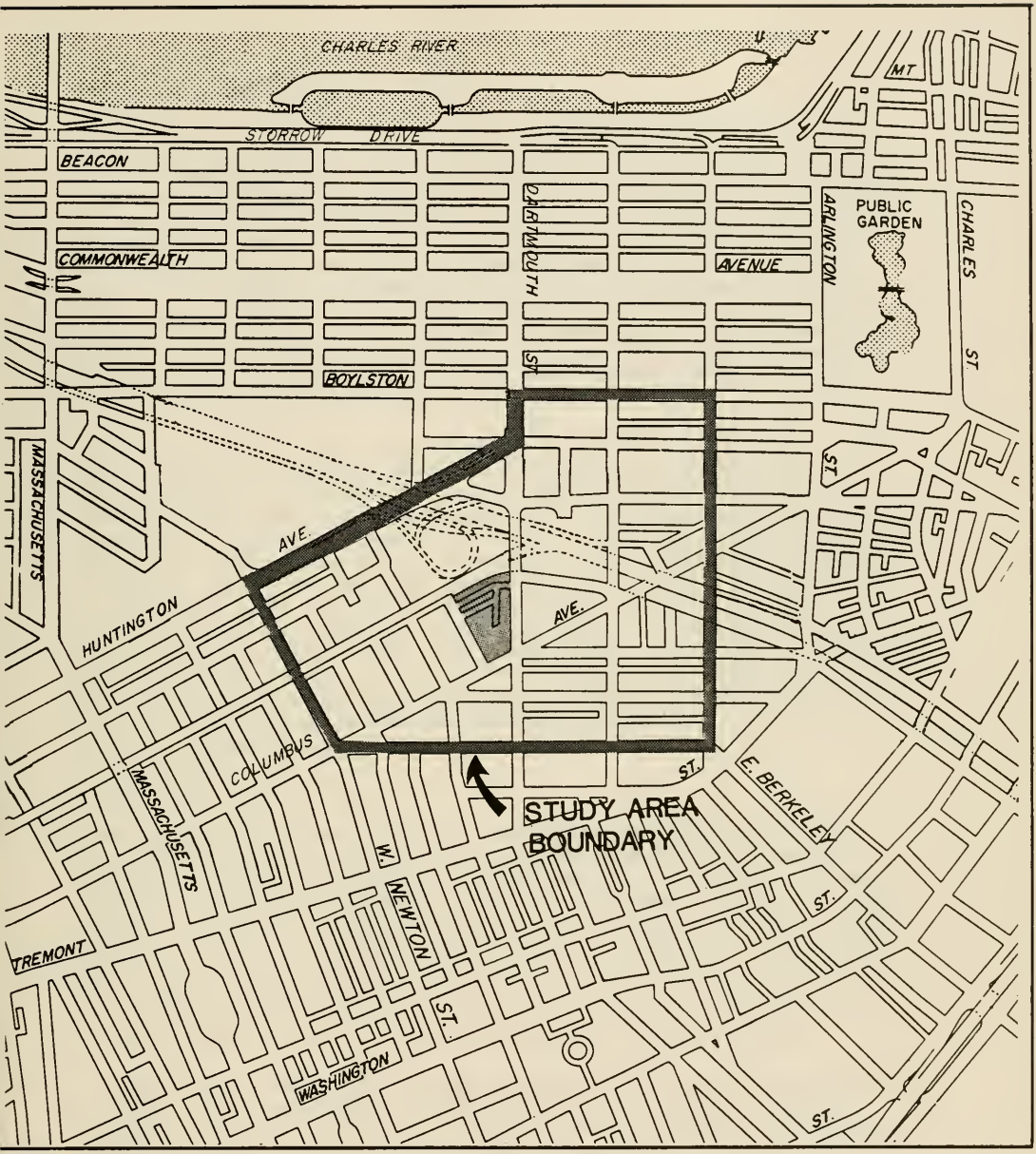
Therefore, the proposed garage alternative and the study alternative garage both contain 367 spaces assigned to commercial-office uses and 129 spaces assigned to Tent City residents. The difference in the number of spaces between the two garages results from different assignments of commercial-retail spaces. The proposed 698 space garage contains 202 commercial-retail spaces while the 541 space study alternative garage contains 45 commercial-retail spaces.

The assessment of the proposed 698-space garage and the 541-space study alternative garage is presented in Section 3.8.2-Probable Impacts.

3.8.1 Existing Conditions/Affected Environment

The traffic impact study area for the Tent City development, as specified by the Massachusetts Executive Office of Environmental Affairs (EOEA) Scope for the preparation of this EIR/EIS, was defined based on a preliminary assessment of the probable impact of the distribution and assignment of site traffic upon the surrounding streets. Only those surface streets and intersections within this area that are expected to be utilized by at least 10 percent of the site traffic have been analyzed. Other streets in the area will be used by site traffic, but the impact associated with those lower volumes will be negligible. Those street segments defining the study area are identified in Figure 32. The limits of the area are Boylston Street on the north, Warren Avenue on the south, W. Newton Street on the west, and Berkeley Street on the east.

Current traffic conditions were determined from a review of available data and reports; an engineering reconnaissance of the affected roadway and public transportation facilities, geometrics, and traffic control devices; and a review of traffic volume data at key roadway segments and intersections.



Project Site

Tent City
Boston, Massachusetts

FIGURE 32
TRAFFIC ANALYSIS STUDY AREA

Scale in feet
0 900 1800

Sasaki Associates, Inc. Watertown, Massachusetts

Existing Transportation Facilities

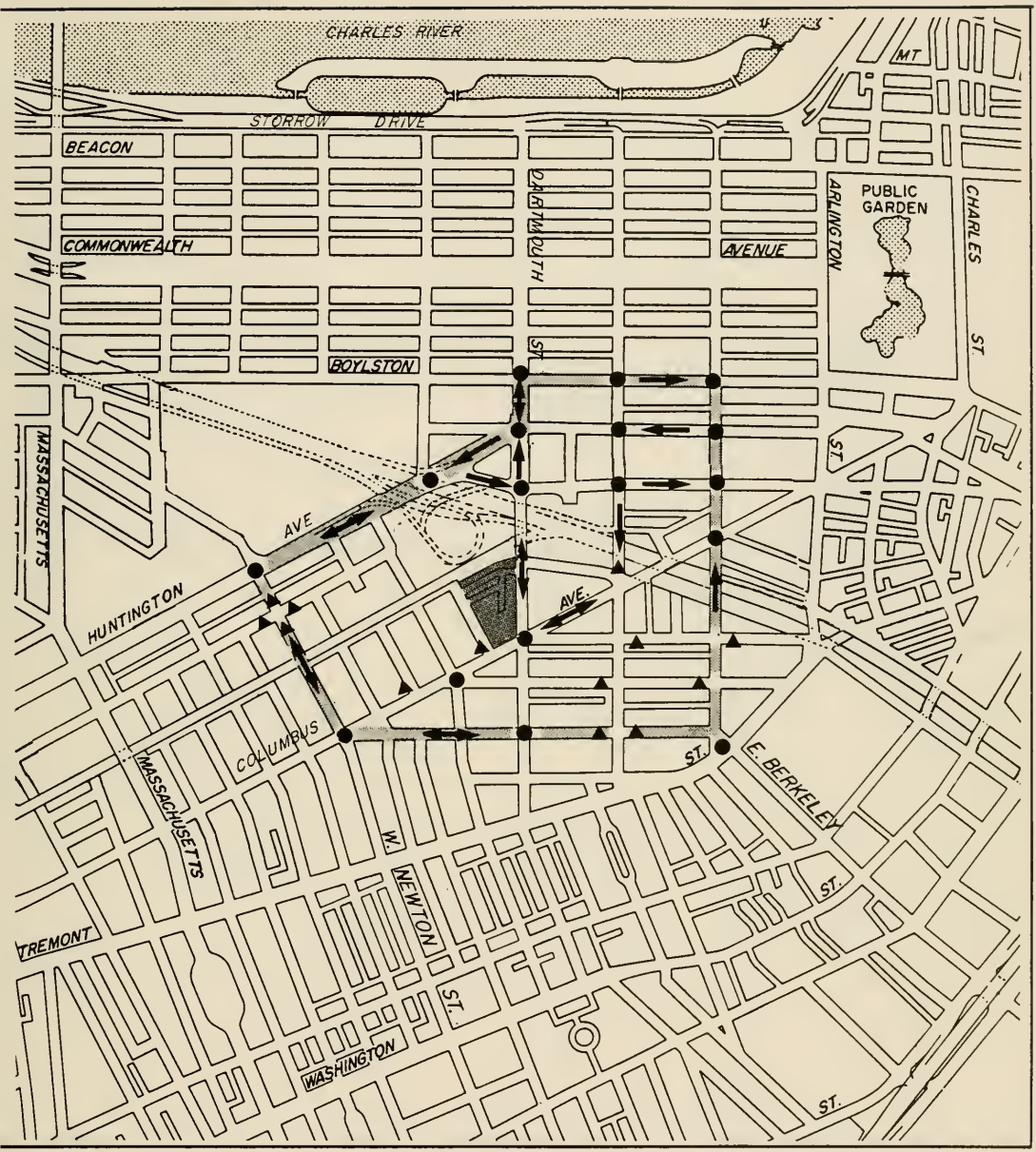
Regional access to the Tent City site is provided by several limited access roadways, including the Massachusetts Turnpike (Interstate 90) and the Southeast Expressway (Interstate 93). Major arterials also providing regional access include State Route 9 (Boylston Street and Huntington Avenue) from the west, State Route 2 from the northwest, and U.S. 1 from the north and south. For access from Interstate 90, the most direct connections to the local street system are the off-ramps at Copley Place. These ramps merge onto Huntington Avenue, between Exeter Street and Dartmouth Street, approximately 0.25 mile northwest of the site. Access from Interstate 93 is provided by several interchanges south and east of the study area. Within the study area, the street system essentially is a one-way grid network, with two-way arterials running diagonal to this pattern (Figure 33).

Alternative public transportation modes are available for access to the site (Figure 34). These include the realigned MBTA Orange Line (currently under construction with an expected completion date by 1986-87), the Green Line, two commuter rail lines (one expected to be completed by 1987), and several bus routes. The Back Bay Station on Dartmouth Street, which will be a stop for both commuter rail lines, is within a block of the Tent City site and eventually will provide access to the Orange Line. Access to the Green Line is provided via two stations, the Copley Station and the Prudential Station, both of which are within four blocks of the site. Bus service is available on Columbus Avenue and at numerous other locations within three to four blocks of the site. Due to the excellent availability of public transit in the site vicinity, it is expected that the majority of Tent City resident trips will be accommodated by these modes of public transit.

Existing Traffic Volumes

Traffic volume data were obtained from reports recently prepared for developments in the vicinity of the proposed Tent City site and from traffic machine counts conducted in 1979 and 1980 by the City of Boston Traffic and Parking Department. The reports include: Skidmore, Owings, and Merrill (1984) for 500 Boylston Street; HMM Associates, Inc. (1984) for Hynes Auditorium; and HMM Associates, Inc. (1980) for Copley Place. The synthesized data, presented in Figures 35, 36, and 37, indicate that the morning peak hour occurs from 7:45 to 8:45 a.m. and the afternoon peak occurs from 5:00 to 6:00 p.m. The data include the peak hour volumes generated from a 'design' event day at Hynes Auditorium.

A comparison of 1984 daily volumes with earlier data from the same street segments indicates a highly variable growth rate as well as traffic reductions on some streets. However, the average growth rate for these segments, based on the available data, is approximately 3.0 percent. This factor was used to determine 1984 volumes at segments and intersections for which 1984 data were not available.



Project Site

Traffic Signal

Stop Sign

Direction of Flow

Tent City

Boston, Massachusetts

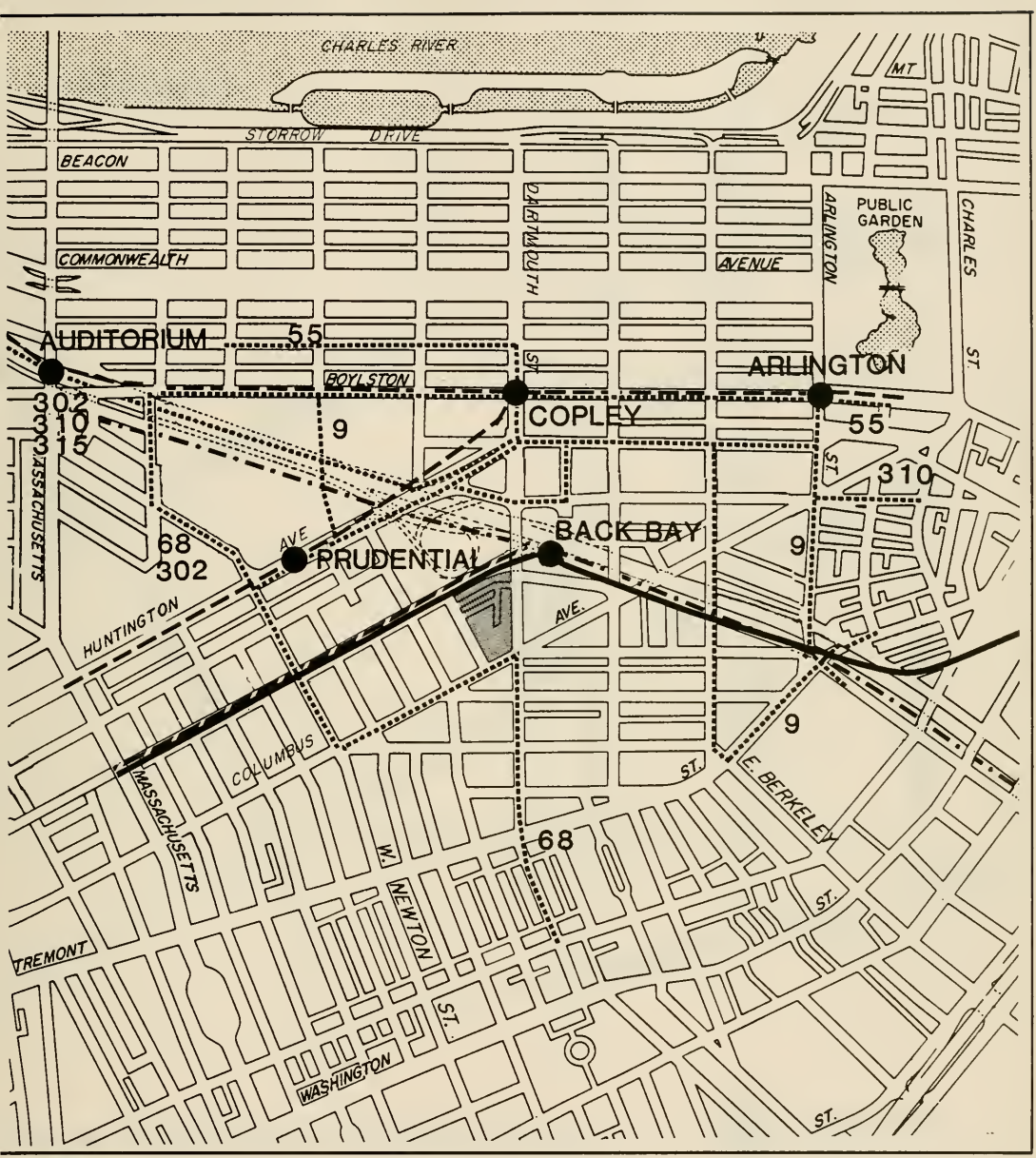
FIGURE 33

EXISTING TRAFFIC NETWORK

Scale in feet

0 900 1800

Sasaki Associates, Inc. Watertown, Massachusetts



Project Site

Rail Station

Proposed Commuter Rail (1987)

Bus Routes

Commuter Rail

Orange Line MBTA (1987)

Green Line MBTA

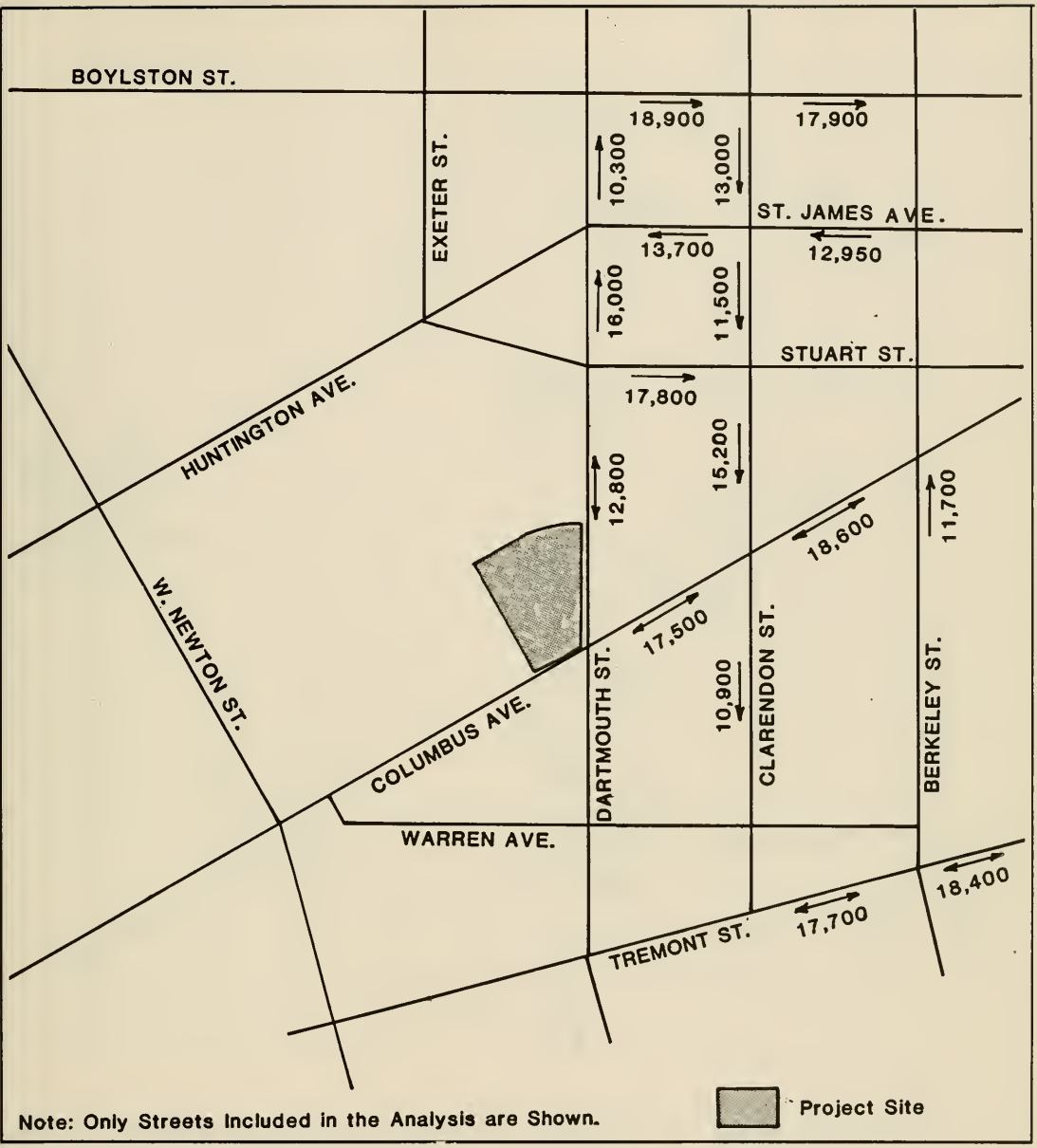
Tent City
Boston, Massachusetts

FIGURE 34

PUBLIC TRANSPORTATION FACILITIES

Scale in feet
0 900 1800

Sasaki Associates, Inc. Watertown, Massachusetts

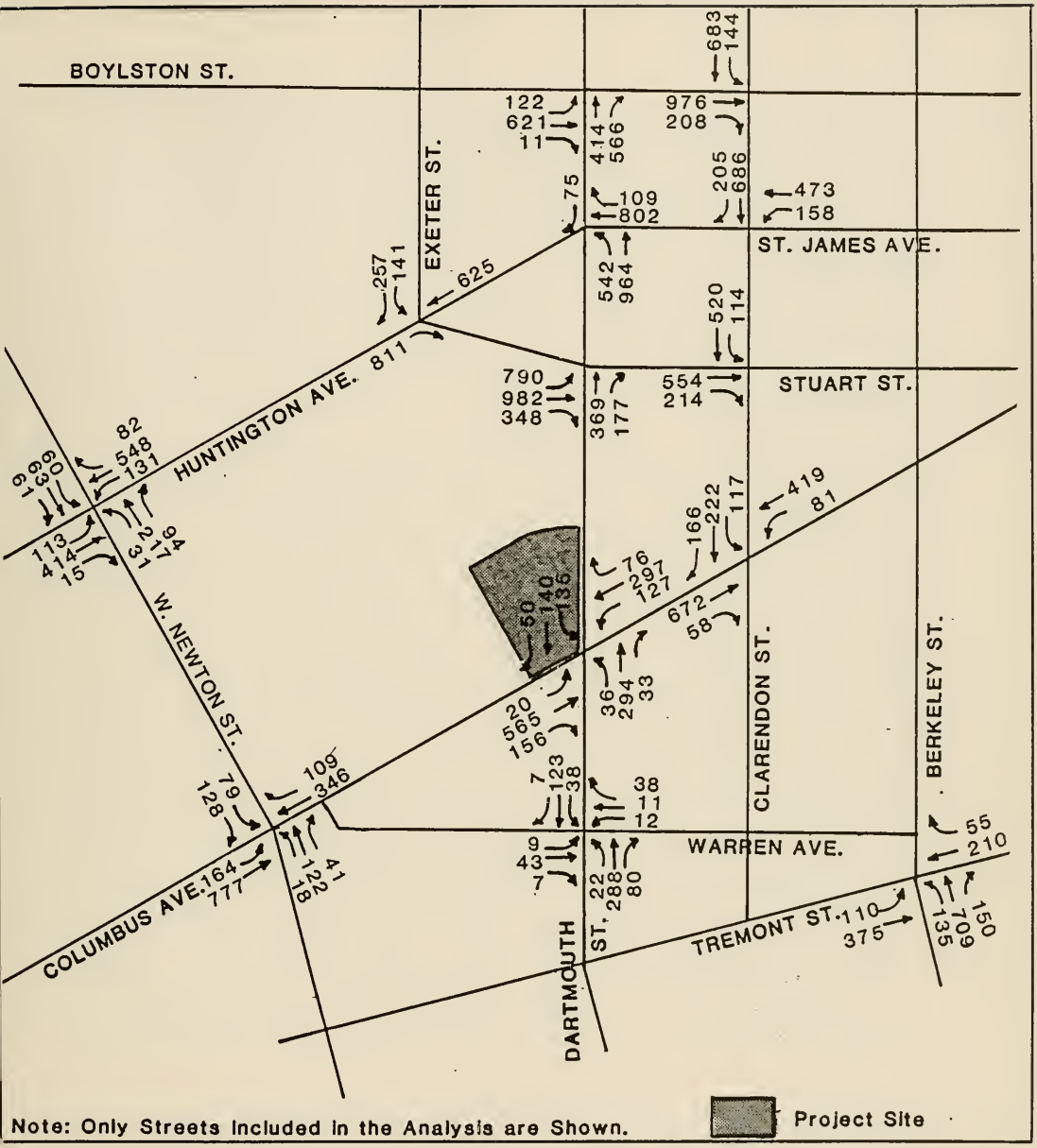


Tent City
Boston, Massachusetts

FIGURE 35
EXISTING DAILY TRAFFIC (1984)

Not to Scale

Sasaki Associates, Inc. Watertown, Massachusetts

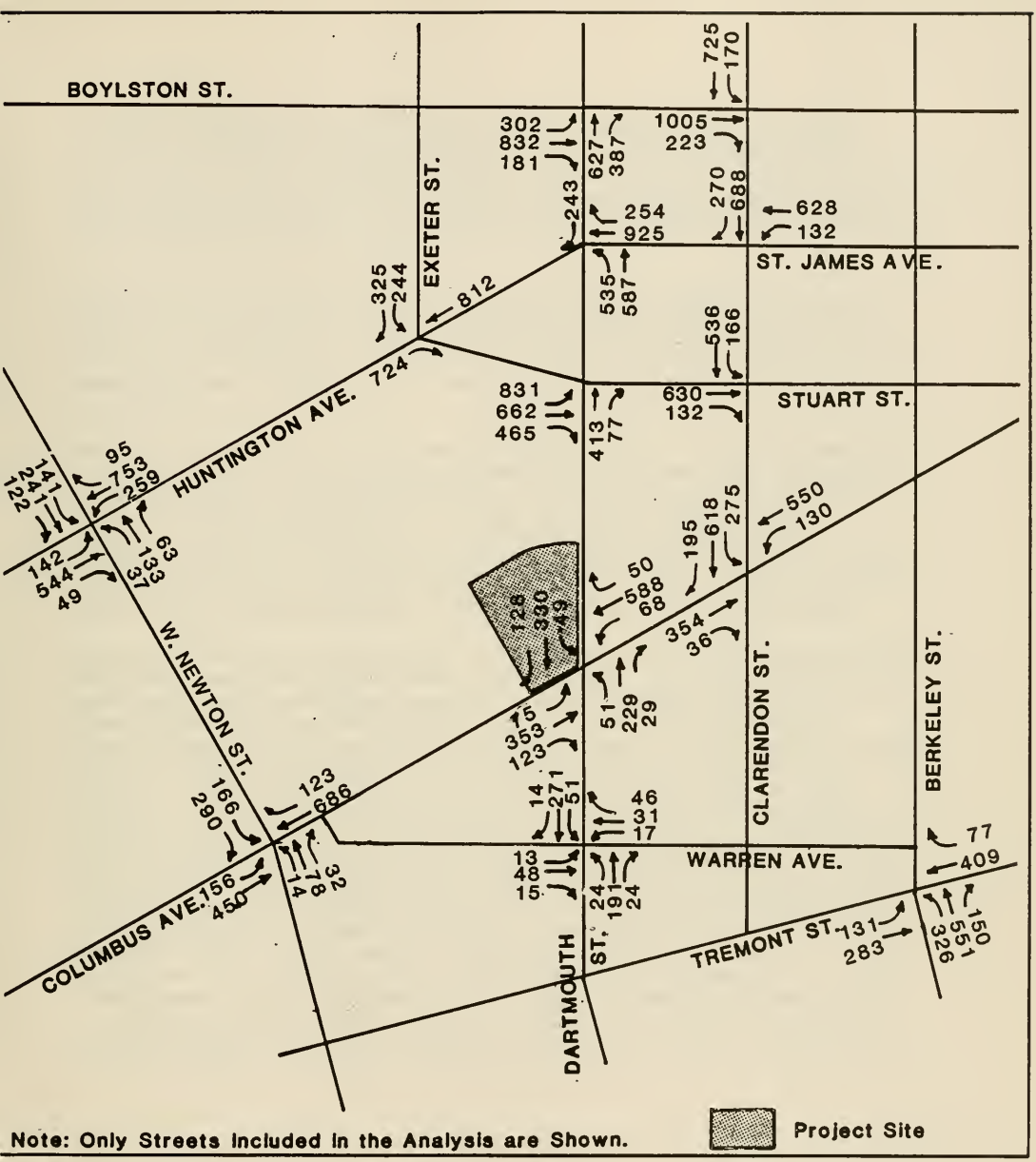


Tent City
Boston, Massachusetts

FIGURE 36
AM PEAK HOUR VOLUMES EXISTING (1984)

Not to Scale

Sasaki Associates, Inc. Watertown, Massachusetts



Tent City
Boston, Massachusetts

FIGURE 37
PM PEAK HOUR VOLUMES EXISTING (1984)

Not To Scale

Sasaki Associates, Inc. Watertown, Massachusetts

The impact of traffic re-routing to avoid the consequences of current long-term construction in the area, illegal parking, double-parking, on-street parking of delivery vehicles, etc., can have a significant effect on the actual operating level of service of an intersection. If, for example, an approach lane is blocked by an illegally parked vehicle, the anticipated level of service forecast by the analysis model would not account for this condition.

The results of the intersection analyses (Table 12) generally are equivalent to the results for those intersections obtained in previous studies. In those cases where the results do not concur, the differences principally are due to a fine-tuning of analysis procedures based on Sasaki Associates recent field observations of actual peak hour traffic operations.

The egress point from the proposed parking garage is located on Dartmouth Street, 240 feet north of Columbus Avenue and 740 feet south of Stuart Street. A queue analysis was performed to assess the effect of traffic queues extending from these two intersections back to the garage driveway. Current maximum queue lengths on Dartmouth Street from Columbus Avenue are 42± feet during the morning peak and 58± feet during the afternoon peak. Maximum queue lengths from Stuart Street are 54± feet during the morning peak and 56± feet during the afternoon peak.

Because of the short block length (225 feet) on Dartmouth Street between St. James Avenue and Stuart Street, an additional queue analysis was performed for the northbound approach volume on Dartmouth Street at St. James Avenue. The maximum queue is currently 149± feet during the morning peak and 124± feet in the afternoon peak. Both of these are well below the available block length between St. James Avenue and Stuart Street. A weaving problem was observed at this intersection, however, between northbound vehicles turning left to access the Massachusetts Turnpike on-ramp and southbound traffic on Dartmouth Street turning right to proceed westbound on Huntington Avenue. The existing phasing allows simultaneous turning movements by both of these approach volumes, except when a pedestrian activates the exclusive crossing phase on the west leg of the intersection. When so activated, the northbound volumes receive a 15-second advance green phase, which clears the majority of the northbound volume turning left, thereby minimizing the amount of weaving traffic near the Turnpike on-ramp. Although the weaving volumes are at acceptable capacity levels on the west leg of this intersection, the intermittency of the advance green phase for the northbound approach does adversely affect the safety of this intersection.

Table 12. Capacity analysis - existing conditions (1984).

Signalized Intersection	Capacity	AM Peak Volume (vph)	AM Peak V/C*	AM Peak Level of Service	PM Peak Volume (vph)	PM Peak V/C	PM Peak Level of Service
Boylston/Dartmouth	1425	818	0.57	A	861	0.60	B
Boylston/Clarendon	1425	842	0.59	A	897	0.63	B
St. James/Dartmouth	1375	723	0.53	A	853	0.62	B
St. James/Clarendon	1500	692	0.46	A	775	0.52	A
Huntington/W. Newton	1425	718	0.50	A	899	0.63	B
Huntington/Exeter**	1425	592	0.42	A	806	0.57	A
Stuart/Dartmouth	1425	676	0.47	A	627	0.44	A
Stuart/Clarendon**	1500	603	0.40	A	633	0.42	A
Columbus/W. Newton	1500	729	0.49	A	880	0.59	A
Columbus/Dartmouth	1500	808	0.54	A	769	0.51	A
Warren/Dartmouth**	1500	468	0.31	A	399	0.27	A
Tremont/Berkeley	1500	766	0.51	A	917	0.61	B

Unsignalized Intersection	Critical Movement	AM Peak Capacity (pcph)	AM Peak Vol. (pcph)	AM Peak Level of Service	PM Peak Capacity (pcph)	PM Peak Vol. (pcph)	PM Peak Level of Service
Columbus/Clarendon	Clarendon thru-left	119	252	E***	157	542	E***

*Volume/Capacity Ratio

**Intersections not analyzed in previous studies.

***Adjacent signals provide greater gaps for turn movements, thereby improving Level of Service to "E".

The street system in the study area is designed to operate at acceptable levels of service for the existing volumes during both peak periods. When delays were observed, they usually were attributable to reduced capacity of the street segments as a result of illegal parking. The only intersection which does not meet acceptable standards is the unsignalized intersection of Columbus Avenue at Clarendon Street. However, signals now are being installed and can be expected to improve the traffic conditions at this intersection to acceptable levels.

3.8.2 Probable Impacts

The proposed development is comprised of approximately 270 multi-family dwelling units, 7,500 gsf of commercial-retail space, and an underground parking garage for 698 cars. (As mentioned a smaller study alternative parking garage for 541 cars, has also been examined to better assess the impact of the proposed garage). Of the 698 spaces, 129 will be allocated for residents. The remaining 569 commercial spaces are distributed for the purposes of this analysis as, 367 for commercial-office users (i.e. low-turnover employee parking), and 202 for high-turnover, commercial-retail users (primarily for patrons of Copley Place). Surface parking on Dartmouth Street, Columbus Avenue, Yarmouth Street and Tent City's internal street (approximately 50 spaces), also will be available for resident use. This will bring the total residential parking to 179, which slightly exceeds the residential parking space requirement of 0.6 spaces per dwelling unit. The site currently contains 276 public parking spaces used exclusively by employees of IBM. Therefore, the parking garage will provide a net increase of 422 spaces.

Under the parking control requirements of the City of Boston Air Pollution Control Commission, a parking "freeze" has been established. This "freeze" applies only to those new spaces available to the general public for a fee. Therefore, those site parking spaces allocated to the residents and commercial-office users are exempt from the parking freeze regulations. The spaces assigned for retail patrons will not exceed the existing 276-space parking area for which a permit already exists. As a result, the proposed parking garage satisfies the criteria for regulated parking spaces. This would also be the case for the study alternative garage with 541 spaces.

As indicated in Tables 15 and 16, the component parking spaces allocated for office employees have significantly greater trip rates during the AM peak hour than those spaces designated for retail shoppers. However, the total trips during the PM peak hour for office and retail uses are essentially equivalent, although the outbound movement is heavier for office than for retail uses. Therefore, a reduction in the allocation of office parking spaces with a corresponding increase in the allocation of retail spaces would result in improved garage related traffic conditions during the AM peak with a nominal impact reduction in the PM peak hour.

Furthermore, in the event that a partial waiver of the parking freeze were requested and granted to allow some employee-dedicated spaces to be used for retail parkers in non-peak weekday evenings, and on weekends, it is unlikely that significant changes in levels of service for key intersections would result.

This is based upon the following factors: a preliminary review of available weekend traffic data provided by HMM Associates, Inc. (1984), which had assessed a portion of the intersections in the Tent City study area for the weekend peak; a similar parking fee structure for the Tent City garage as for the Copley Place; and a longer parking duration for the retail shoppers on the weekend than on a typical weekday. The weekend peak traffic volumes tend to be lower overall than those for the weekday PM peak period. Although the weekend volumes for the commercial-retail component will tend to generate a higher volume of traffic than during the weekday, the lower background traffic volumes will offset this increase, and result in no significant difference between weekday and weekend peak period traffic conditions.

During the weekday evenings, both the background traffic and commercial-retail parking demand tend to be significantly lower than the weekday PM peak period. As a result, there would be no significant change in the level of service at key intersections for that period of the day.

Trip Generation and Trip Attraction

The Massachusetts Executive Office of Environmental Affairs (EOEA) Scoping Certificate defined the existing data to be utilized for the assessment of existing conditions and the 1988 Build and No-Build conditions, including peak hour traffic for existing conditions (1984), peak hour 1988 Build and No-Build conditions, and existing daily traffic for 1984. Capacity analyses are provided for all study area intersections through which a significant portion of the project traffic will pass.

As requested by EOEA, the design year selected for analysis is 1988, the first full year the Tent City project is expected to be completed and fully occupied, and will include the future traffic to be generated by other future developments in the study area (i.e., 500 Boylston Street, the National Garage, etc.). Although these future developments have a 1989 design year, the full traffic component from these anticipated developments have been assigned to 1988 in this study, in order to more conservatively predict future impacts.

The traffic to be generated by Tent City during the peak hours will consist of primarily weekday commuting trips by the residents at the site, with a much smaller component generated by the on-site (community) retail space. The proposed parking garage will attract motorists on both work and non work-related trips (office employees and off-site retail shoppers), with the spaces assigned to office employees both replacing the existing parking spaces and alleviating some of the parking shortage at Copley Place. Those spaces assigned to Copley Place retail shoppers will have a high turnover rate and generate a significantly greater daily volume of traffic than the residential and community retail components. Retail trip demand during the peak hours, however, is not expected to add significant volumes to the study area street system.

The number of peak hour and weekday trips is based upon a combination of factors presented in the Institute of Transportation Engineers (1982), the Urban Land Institute (1983), and Skidmore, Owings, and Merrill (1985).

In order to determine the amount of traffic generated by the site and attracted to the parking garage, the traffic volumes associated with each land use on the Tent City site and the parking allocations for the garage must be evaluated separately. Additionally, the availability of alternative transportation modes, the proximity of major employment and retail centers, and the resident population surrounding the site will have a significant effect upon the daily and peak hour volumes generated by this development.

The residential trip component of the Tent City development is expected to be primarily non-automotive due to the site's proximity and accessibility to numerous public transit lines. Therefore, it is assumed that 60 percent of the daily and peak hour trips by the residents of the site will be by public transportation. The analysis results presented in Table 13 include (a) total trips (by all modes) predicted on the basis of the Institute of Transportation Engineers' trip rate schedule (condominium) applicable to this development, and (b) the component of total trips to be made by private vehicles. These same trip rates apply to the study alternative 541-space garage.

Table 13. Trip generation (residential component of Tent City).

Trip Rate	Average Weekday	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total
Per Dwelling Unit	5.2	0.07	0.37	0.44	0.37	0.19	0.56
Full Development - Both Garage Alternatives							
270 Units							
Total Trips*	1,404	19	100	119	100	51	151
Vehicle Trips*	562	8	40	48	40	20	60

* A trip is defined as one vehicle either entering or leaving the site. Thus, 562 daily vehicle trips represents 281 entering vehicles and 281 exiting vehicles.

The market area of the community retail portion of the Tent City development is expected to serve primarily the residents of the site and the residents of the surrounding neighborhood. The majority of patrons (approximately 75 percent) are expected to walk to this retail space, resulting in a minimal amount of vehicular traffic generation. The amount of total site and vehicular traffic to be generated by the community retail space is presented in Table 14, and reflects the 75 percent reduction in vehicular traffic. As with the residential trips, the same trip rates will apply to the study alternative 541-space garage.

Table 14. Trip generation (community retail component of Tent City).

Trip Rate	Average Weekday	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total
Per 1,000 gsf	117.9	1.57	1.36	2.93	7.21	7.21	14.42
Full Development - Both Garage Alternatives							
7,500 gsf							
Total Trips	884	12	10	22	54	54	108
Vehicle Trips	222	3	2	5	14	14	28

Up to 367 parking spaces proposed to be allocated to Copley Place office employees will replace the 276 spaces currently utilized as Copley Place employee parking, resulting in a net increase of up to 91 commercial-office spaces on the site. Assuming the arrival/departure demand characteristics for these spaces will be similar to those of other office developments, it is anticipated that 60 percent of the total supply will turn over during each of the peak hours, with an arrival/departure split of 90 percent/10 percent during the morning peak hour and 10 percent/90 percent during the afternoon peak. The turnover rate during the typical weekday is assumed to be 1.0 vehicle per space because the extent of services in the immediate area will reduce employee trips during the off-peak hours. These rates also will apply to the 541-space study alternative garage.

Table 15. Trip attraction (new commercial-office parking spaces).

Trip Rate	Average Weekday Trips	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total
Per Parking Space	2.0	0.54	0.06	0.60	0.06	0.54	0.60
Full Development - Both Garage Alternatives							
91 spaces	182	50	5	55	5	50	55

The parking spaces to be allocated to commercial-retail patrons will have a much higher turnover rate than the commercial-office spaces, and will comprise the most significant portion of total daily trips to be generated by the development with a 698-space garage. With a 541-space garage, only 45 spaces will be allocated to retail patrons; therefore, the peak hour volumes associated with these spaces will make up a substantially lower component of total traffic. Based upon data findings presented in the 500 Boylston Street project (1985), parking turnover rates for retail parking spaces in the downtown Boston area range from 3 to 7 vehicles per space per day. Therefore, a conservative turnover rate of 6.0 vehicles per space per day is assumed for the retail component, and was used in the analysis of this project. Due to the extensive amount of retail development in the immediate area, the utilization rate of these spaces during the peak hours is assumed to correspond to the travel characteristics of a regional shopping area. Approximately 10 percent of the parking spaces will turn over in the morning peak and 60 percent in the afternoon peak. The results presented in Table 16 indicate relatively low volumes associated with these parking spaces during the peak hours.

Table 16. Trip attraction (retail parking space).

Trip Rate	Average Weekday Trips	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total
Per Parking Space	12.0	0.07	0.03	0.10	0.30	0.30	0.60
Full Development							
698-space garage:							
202 spaces	2,424	15	5	20	60	61	121
541-space garage:							
45 spaces	540	3	1	4	13	13	26

Summaries of the total vehicle trips to be generated by and attracted to the Tent City site with a 698-space garage and a 541-space garage are presented in Table 17 and Table 18, respectively.

Table 17. Trip summary (698-space garage).

	Average Weekday Vehicle Trips	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total
Generators							
270 dwelling units	562	8	40	48	40	20	60
7,500 gsf Commercial-Retail	222	3	2	5	14	14	28
Parking Spaces							
91 Commercial-Office (Net Increase)	182	50	5	55	5	50	55
202 Commercial-Retail	2,424	15	5	20	60	61	121
Total	3,390	76	52	128	119	145	264

Table 18. Trip summary (541-space garage alternative).

	Average Weekday Trips	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total
Generators							
270 dwelling units	562	8	40	48	40	20	60
7,500 gsf Commercial-Retail	221	3	2	5	14	14	28
Parking Spaces							
91 Commercial-Office (Net Increase)	182	50	5	55	5	50	55
45 Commercial-Retail	540	3	1	4	13	13	26
Total	1,505	64	48	112	72	97	169

Due to the wide range of commercial-retail parking turnover rates existing in the City of Boston, a lower turnover rate for this development could occur during the weekdays, which will substantially lower the daily traffic volume. Table 19 and 20 present a comparison of the daily traffic associated with a turnover rate of 3.0 vehicles per space per day instead of the 6.0 rate used for analysis purposes for this development.

Table 19. Daily site traffic comparison for commercial-retail turnover rates (698-space garage).

Generators	Average Weekday Trips	Generators	Average Weekday Trips
270 D.U.'s	562	270 D.U.'s	562
7,500 gsf Commercial-Retail	222	7,500 gsf Commercial-Retail	222
Parking Spaces		Parking Spaces	
91 Commercial-Office (Net Increase)	182	91 Commercial-Office (Net Increase)	182
202 Commercial-Retail	2,424*	202 Commercial-Retail	1,212**
Total	3,390	Total	2,178

*Turnover Rate = 6.0 (Used for Analysis)
** Turnover Rate = 3.0

Table 20. Daily site traffic comparison for commercial-retail turnover rates (541-space garage alternative).

Generators	Average Weekday Trips	Generators	Average Weekday Trips
270 D.U.'s	562	270 D.U.'s	562
7,500 gsf Commercial-Retail	221	7,500 gsf Commercial-Retail	221
Parking Spaces		Parking Spaces	
91 Commercial-Office (Net Increase)	182	91 Commercial-Office (Net Increase)	182
45 Commercial-Retail	540*	45 Commercial-Retail	270**
Total	1,505	Total	1,235

*Turnover Rate = 6.0 (Used for Analysis)
** Turnover Rate = 3.0

Assuming the conservative 6.0 turnover rate for commercial-retail spaces at full development with a 698-space garage, there will be a total of 3,390 new daily site trips, or 1,695 entering vehicles and 1,695 exiting vehicles. The 541-space study alternative garage would produce 1,505 new daily trips, or 752 entering vehicles and 752 exiting vehicles at full development. Assuming a lower 3.0 turnover rate there will be a total of 2,178 daily site trips in 698-space garage and 1,235 trips in the 541 space study alternative garage.

Trip Distribution

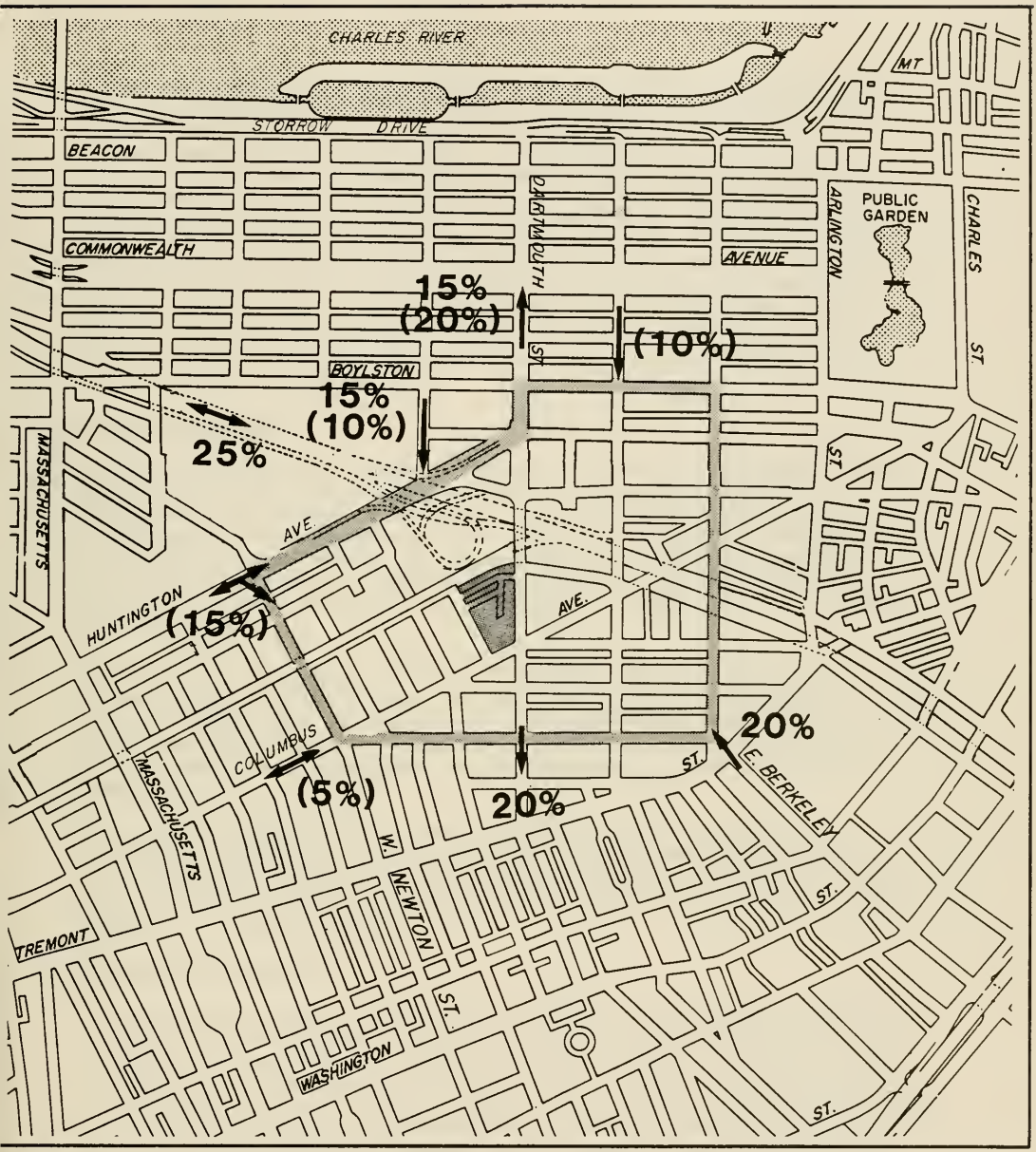
The predicted distribution of site-generated vehicular traffic from the residential and commercial-retail development and the traffic volume utilizing the proposed parking garage is based upon an evaluation of the location of regional and local resident populations and the available street and highway facilities. The majority of vehicular traffic is expected to access the site via the regional roadway network serving the greater Boston Metropolitan Area (i.e., Massachusetts Turnpike, Southeast Expressway, and Storrow Drive). A smaller component of trips, from areas in closer proximity to the site, are expected to use a combination of major arterial roadways (i.e., Huntington Avenue, Columbus Avenue, and Commonwealth Avenue) and collector streets leading into the study area.

Figure 38 depicts expected regional and local site traffic distributions. Regional traffic distribution is expected to account for approximately 60 percent of the trips to and from the study area. The percentage shown on Figure 38 indicate that approximately 60 percent of the trips will enter and leave the study area via regional roadway networks (i.e., the percentages not in brackets total 60 percent for inbound and 60 percent for outbound traffic for the study area). Correspondingly, 40 percent of the sites trips are expected to enter and leave the study area via local road networks (i.e., the percentages in brackets total 40 percent for inbound and 40 percent for outbound traffic from the study area).

A summary of the distribution factors is presented in Table 21 and Figure 38.

Table 21. Trip distribution for vehicular site traffic.

	Percentage
Regional:	
To and from the north and east	15
To and from the south	20
To and from the west	25
Total	60
Local:	
To and from the north	10
To and from the south and west	20
To and from the east	10
Total	40



Project Site

XXX - Regional Distribution - 60%

(XXX) - Local Distribution - 40%

Tent City

Boston, Massachusetts

FIGURE 38

TRIP DISTRIBUTION

Scale in feet

0 900 1800

Recent roadway improvement proposals in the vicinity of the study area include the extension of Herald Street to the Berkely Street/Columbus Avenue intersection from its current terminus at the Arlington Street/Tremont Street intersection. This extension can be expected to result in some trip rerouting for through traffic passing through the study area as well as for some portion of the Tent City parking garage traffic heading for the Southeast Expressway (I-93). Therefore, it can be expected that there will be some reduction in the number of trips passing through the South End to and from the study area, particularly along Dartmouth Street when the Herald Street extension is completed. However, current funding for this proposal is set for 1987-88, with actual construction not expected before 1990. Consequently, the Herald Street extension was not incorporated into the trip distribution and other analyses in this study.

Traffic Assignment

Future traffic on the roadways to be used for access to and egress from the site includes both existing volumes and trips from other new development not related to the site (future background traffic), and corresponds with the traffic growth assumptions reported in previous studies as required by EOEA in the Scope for this EIR/EIS. Therefore, the background traffic is assumed to represent the volume increases generated by both new development and expanded developments in and around the study area.

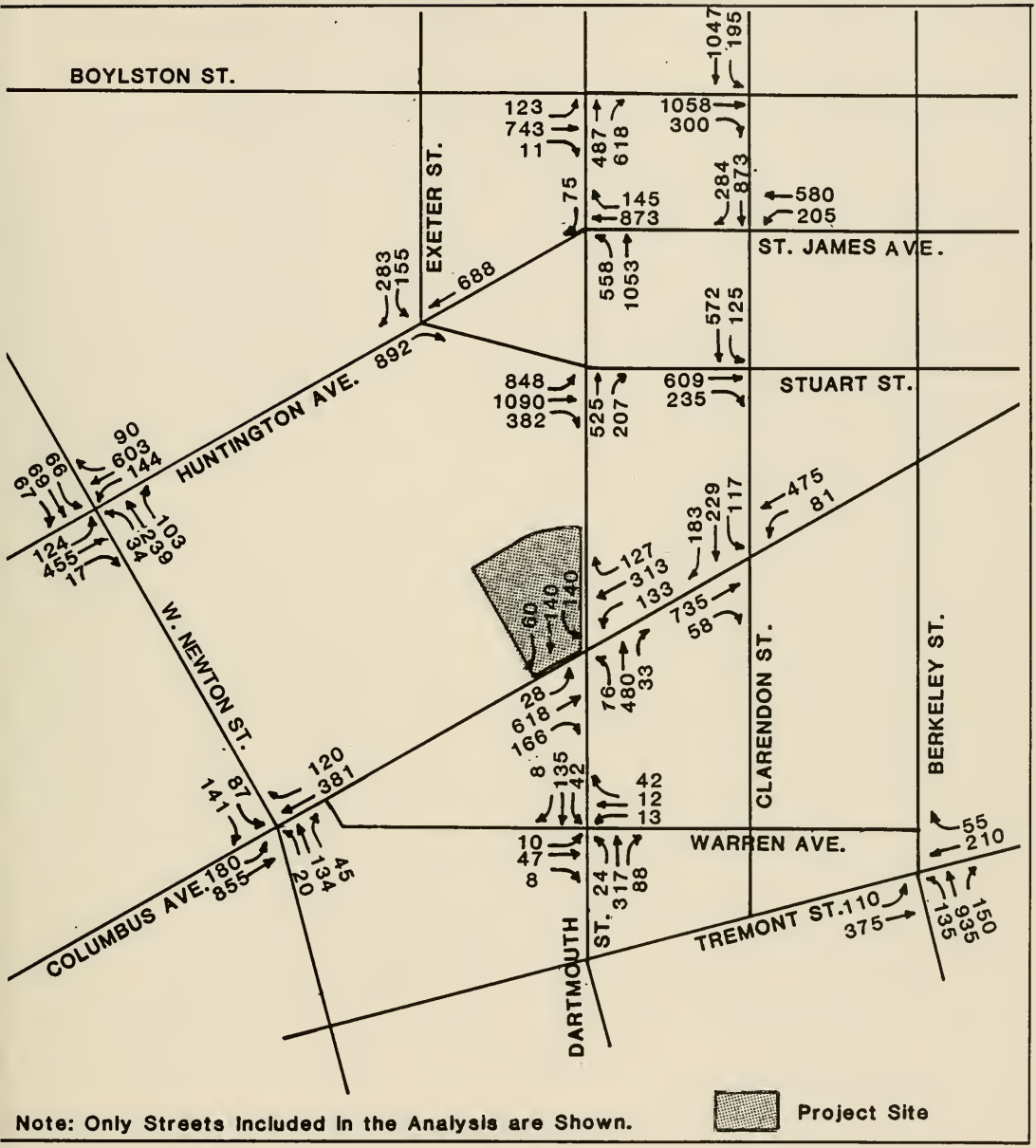
The traffic impact of the proposed development has been analyzed by comparing the projected, future volume of traffic, both with and without the site traffic, to the capacity of critical roadway intersections. For each alternative, a level of service (A through F) has been determined for the same group of critical traffic movements to enable consistent comparison.

Design year peak hour volumes not including the site traffic (No-Build Alternative) are depicted in Figures 39 and 40. These include all projected traffic associated with the Hynes Auditorium expansion. Peak hour volumes including the projected site traffic (Build Alternative) are depicted in Figures 41 and 42.

No-Build Alternative

Future roadway volumes under this alternative will consist of existing traffic and traffic to be generated by other proposed developments in and around the study area. The capacity analyses results for the No-Build Alternative are summarized in Table 22. In general, these results concur with those reported in previous transportation reports. The intersection of Columbus Avenue at Clarendon Street currently is being signalized as part of a larger-scale improvement to the signal system along the major streets in this area.

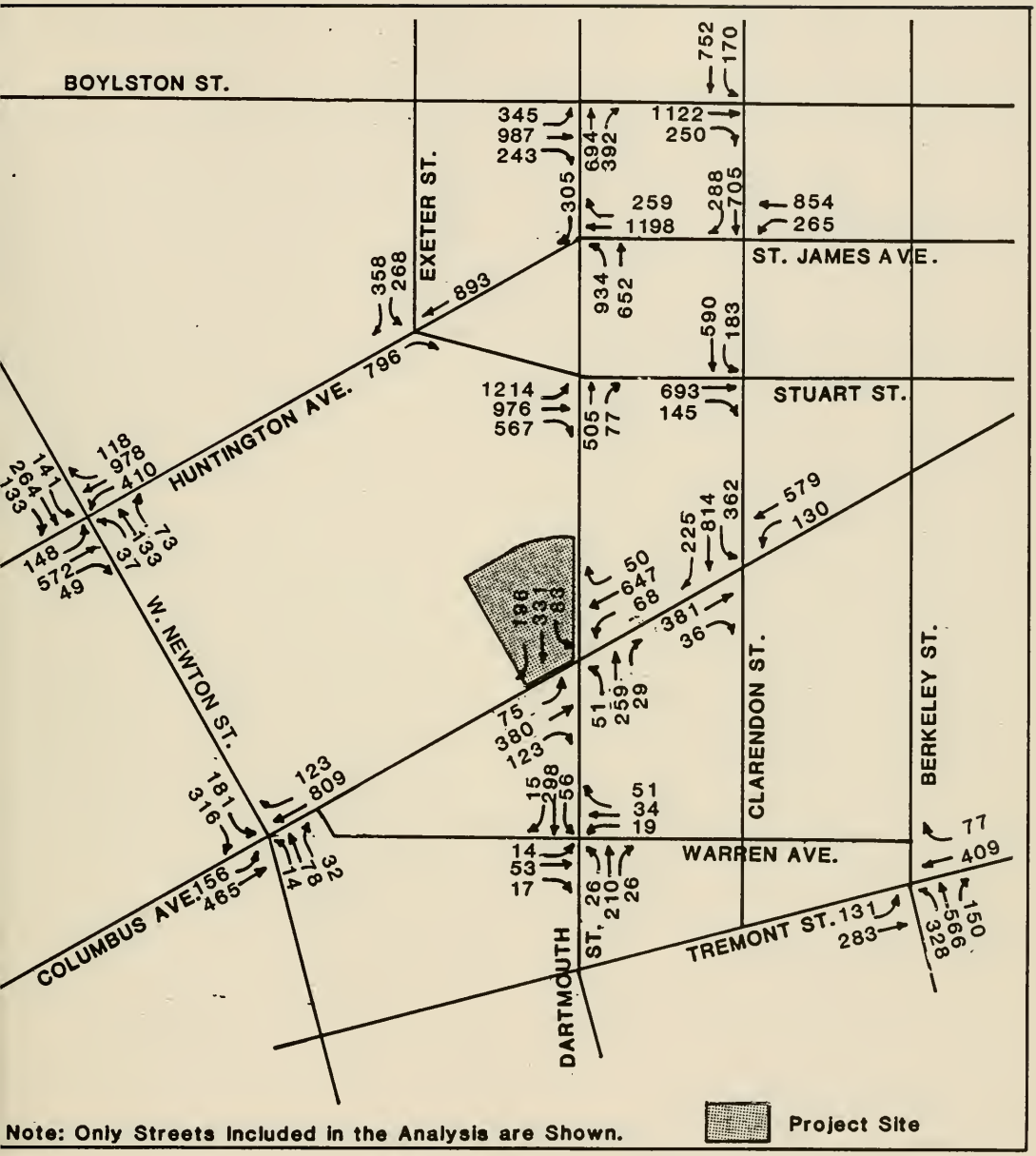
Queue analyses were performed for the intersections on Dartmouth Street at Columbus Avenue, Stuart Street, and St. James Avenue. These queue analyses were conducted assuming the implementation of planned areawide signal system improvements to optimize the signal phasing for critical approach volumes. The maximum queue on the southbound approach at



Tent City
Boston, Massachusetts

FIGURE 39
AM PEAK HOUR VOLUMES NO BUILD (1988)

Not To Scale

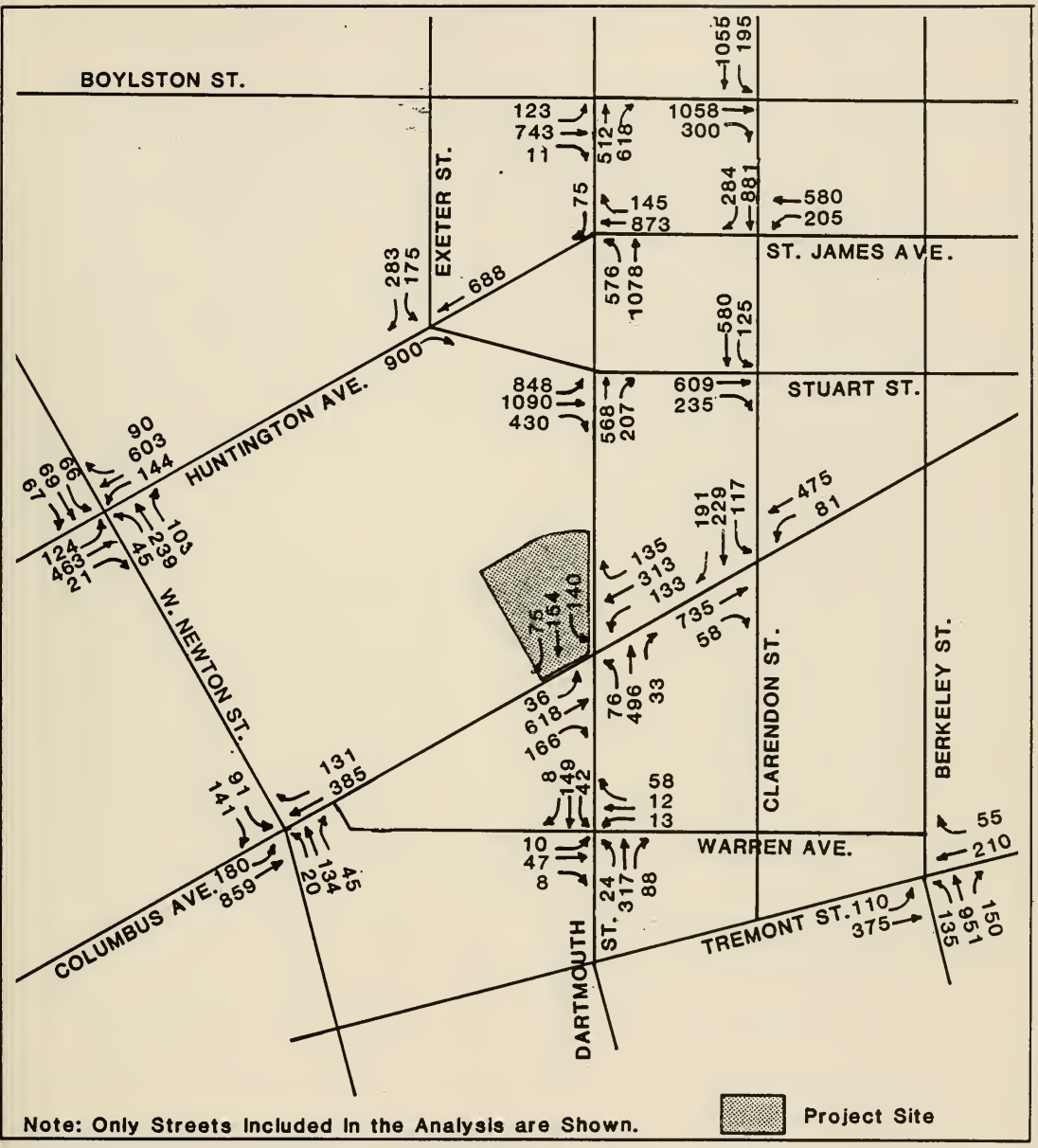


Tent City
Boston, Massachusetts

FIGURE 40

PM PEAK HOUR VOLUMES NO BUILD (1988)

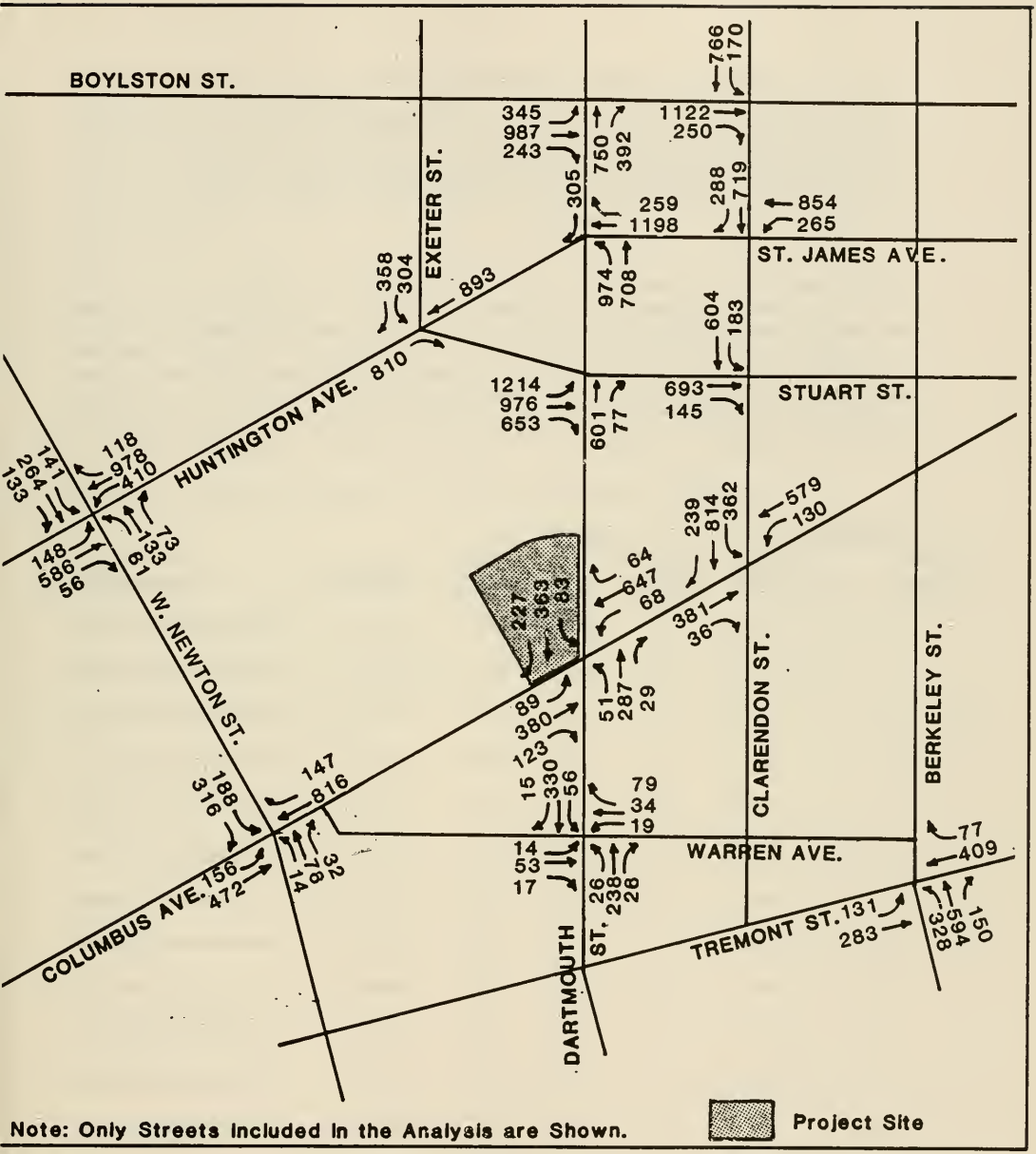
Not To Scale



Tent City
Boston, Massachusetts

FIGURE 41
AM PEAK HOUR VOLUMES BUILD (1988)

Not To Scale



Tent City
Boston, Massachusetts

FIGURE 42
PM PEAK HOUR VOLUMES BUILD (1988)

Not To Scale

Columbus Avenue will be 53± feet during the morning peak and 101± feet during the afternoon peak. At Stuart Street, the maximum queue on the northbound approach will be 131± feet during the morning and 113± feet during the afternoon peak hour. At St. James Avenue, the maximum queue on the northbound approach will be 159± feet in the morning and 189± feet in the afternoon. All of these queues can be accommodated within the available spacing between the intersections and at the proposed garage access point.

Without the addition of Tent City traffic, the study area intersections and street segments are expected to operate at acceptable levels of service during both peak hours. The intersection of St. James Avenue and Dartmouth Street will operate at a level of service between "D" and "E" during the afternoon peak. Although acceptable, this level of service indicates that the intersection may experience some congestion during the afternoon peak hour. The weaving volumes on the western leg of St. James Avenue at Dartmouth Street are expected to remain at acceptable levels.

Table 22. Capacity analysis - no-build alternative (1988).

Signalized Intersection	Capacity	AM Peak Volume (vph)	AM Peak V/C*	AM Peak Level of Service	PM Peak Volume (vph)	PM Peak V/C	PM Peak Level of Service
Boylston/Dartmouth	1425	920	0.65	B	961	0.67	B
Boylston/Clarendon	1425	1,119	0.79	C	956	0.67	B
St. James/Dartmouth	1375	788	0.57	A	1,219	0.89	D-E
St. James/Clarendon	1500	889	0.59	A	924	0.62	B
Huntington/W. Newton	1425	790	0.55	A	1,074	0.75	C
Huntington/Exeter**	1425	633	0.44	A	833	0.58	A
Stuart/Dartmouth	1425	807	0.57	A	868	0.61	B
Stuart/Clarendon**	1500	662	0.44	A	696	0.46	A
Columbus/W. Newton	1500	802	0.53	A	968	0.65	B
Columbus/Dartmouth	1500	938	0.63	B	858	0.57	A
Warren/Dartmouth**	1500	515	0.34	A	438	0.29	A
Tremont/Berkeley	1500	879	0.59	A	925	0.62	B
Columbus/Clarendon	1500	784	0.52	A	1,185	0.79	C

*Volume/Capacity Ratio

**Intersections not analyzed in previous studies.

Build Alternative - 698 Space Garage

The capacity analysis results for the build alternative are presented in Table 23. The results indicate that a nominal reduction in the quality of traffic conditions will occur at those intersections nearest to the site. At locations further from the site, the site traffic will be more dispersed and the impacts of site generated traffic far less perceptible.

All intersections will operate at level of service "C" or better during peak hours except the project's garage access intersection with Dartmouth Street (level of service "D") and the intersection of St. James Avenue and Dartmouth Street (at the limits between levels of service "D" and "E") during the afternoon peak hour. Both of these intersections will continue to operate well within their available capacity. The increase in critical volume at St. James Avenue and Dartmouth Street will be only two percent above the No-Build critical demand during the afternoon peak, and the overall impact of site traffic will be minimal.

The maximum queue along the southbound Dartmouth Street approach at Columbus Avenue will be 63± feet in the morning and 112± feet in the afternoon. At Stuart Street, the maximum queues on the northbound approach will be 134± feet during the morning and 126± feet in the afternoon. The northbound approach queue at St. James Avenue will be 163± feet in the morning and 193± feet in the afternoon. These queues are only nominally greater than those which would occur without Tent City (no-build condition), and none will exceed the available storage lengths. Again, these predictions are based on the assumption that improvements to signal phasing and coordination for the critical approach volumes will be completed.

Table 23. Capacity analysis - build alternative (1988) 698-space garage.

Signalized Intersection	Capacity	AM Peak Volume (vph)	AM Peak V/C*	AM Peak Level of Service	PM Peak Volume (vph)	PM Peak V/C*	PM Peak Level of Service
Boylston/Dartmouth	1425	911	0.64	B	960	0.67	B
Boylston/Clarendon	1425	1,112	0.78	C	963	0.68	B
St. James/Dartmouth	1375	797	0.58	A	1,239	0.90	D-E
St. James/Clarendon	1500	894	0.60	A	931	0.62	B
Huntington/W. Newton	1425	796	0.56	A	1,084	0.76	C
Huntington/Exeter**	1425	655	0.46	A	833	0.58	A
Stuart/Dartmouth	1425	821	0.58	A	901	0.63	B
Stuart/Clarendon**	1500	666	0.44	A	703	0.47	A
Columbus/W. Newton	1500	808	0.54	A	986	0.66	B
Columbus/Dartmouth	1500	965	0.64	B	942	0.63	B
Warren/Dartmouth**	1500	532	0.35	A	498	0.33	A
Tremont/Berkeley	1500	887	0.59	A	954	0.64	B
Columbus/Clarendon	1500	789	0.53	A	1,194	0.80	C

Unsignalized Intersection	Critical Movement	AM Peak Capacity (pcph)	AM Peak Vol. (pcph)	AM Peak Level of Service	PM Peak Capacity (pcph)	PM Peak Vol. (pcph)	PM Peak Level of Service
Dartmouth/Garage Access-Egress**	Garage egress left turn	177	41	C***	197	176	D***

*Volume/Capacity Ratio

**Intersections not analyzed in previous studies.

***Adjacent signals provide greater gaps for turn movements, thereby improving Level of Service to "C" in AM and "D" in PM.

Study Alternative - 541 Space Garage

Based on the analysis of the 698-space garage, two intersections are expected to operate at Level of Service "D-E". St. James Avenue at Dartmouth Street and the proposed parking garage driveway at Dartmouth Street. A reduction in the parking component of the project to 541 spaces will minimally improve the operating characteristics of these intersections (Appendix 5), even though the retail parking space component is significantly less. The levels of service for both intersections remain unchanged and underscore the nominal traffic impact of the proposed development under either 'Build' alternative.

Table 24 presents the capacity analysis for the 541-space study alternative garage for the 1988 build alternative.

Table 24. Capacity analysis - build alternative (1988) 541-space garage alternative.

		AM Peak			PM Peak		
Intersection	Capacity	Volume (vph)	V/C*	Level of Service	Volume (vph)	V/C	Level of Service
St. James/Dartmouth	1375	796	0.58	A	1233	0.90	D-E

		AM Peak			PM Peak		
Intersection	Critical Movement	Capacity (pcph)	Vol. (pcph)	Level of Service	Capacity (pcph)	Vol. (pcph)	Level of Service
Dartmouth/Garage Access-Egress**	Garage egress left turn	184	38	C***	194	99	D***

*Volume/Capacity Ratio

**Intersections not analyzed in previous studies.

***Adjacent signals provide greater gaps for turn movements, thereby improving Level of Service to "C" in the AM and "D" in the PM.

3.8.3 Mitigation Measures

The proposed development with either a 541-space or a 698-space parking garage is expected to result in a minimal traffic impact in comparison with the impact associated with the No-Build alternative. The existing street and traffic control system has sufficient reserve capacity to accommodate the increment of new demand generated on the site as well as traffic growth associated with other future development in the area. Where bottlenecks occassionally occur, they are principally the result of illegal curbside or double-parking which blocks the through travel lanes. Consequently, no major measures are necessary to mitigate the impacts of Tent City traffic. This concurs with the results of a previous assessment of Tent City traffic as reported by Skidmore, Owings, and Merrill (1985).

Nevertheless, based upon an engineering reconnaissance of the existing street and traffic control system and an evaluation of the various transportation mode alternatives expected to be operational by 1989, the following intersection and system-wide improvements are recommended:

- An automatic advance green phase for northbound traffic should be provided at the intersection of St. James Avenue and Dartmouth Street. This would clear the majority of traffic turning left towards the Turnpike on-ramp, and minimize the weaving which occurs with the opposing southbound traffic turning right. The Level of Service for this intersection would not be affected by this signal modification.

- Enforcement of the parking restrictions will ensure optimal usage of the available capacity of the intersections and street segments in the study area. Illegal parking reduces roadway widths and the availability of intersection approach lanes and can result in severe congestion problems.

3.9 AIR QUALITY

3.9.1 Existing Conditions/Affected Environment

The U.S. Environmental Protection Agency has set maximum concentration limits to the nation's five major air pollutants in an effort to protect health and welfare. These concentration limits, referred to as the National Ambient Air Quality Standards (NAAQS), are presented in Appendix 6. All states are required to attain and maintain the NAAQS by 1987. As a result, the Massachusetts Department of Environmental Quality Engineering (DEQE), the agency responsible for the protection of air quality, has devised strategies to reduce ozone and carbon monoxide concentrations, the state's two non-attainment pollutants.

Since the traffic to be generated by Tent City could have a significant effect on local carbon monoxide concentrations, The DEQE has requested that a carbon monoxide analysis be conducted. The description of methodology, worksheets, and results of the air analysis are presented in Appendix 6. The contribution of ozone from the Tent City project will have an insignificant effect on air quality when compared to surrounding industrial and transportation sources. Therefore, an ozone analysis is not necessary.

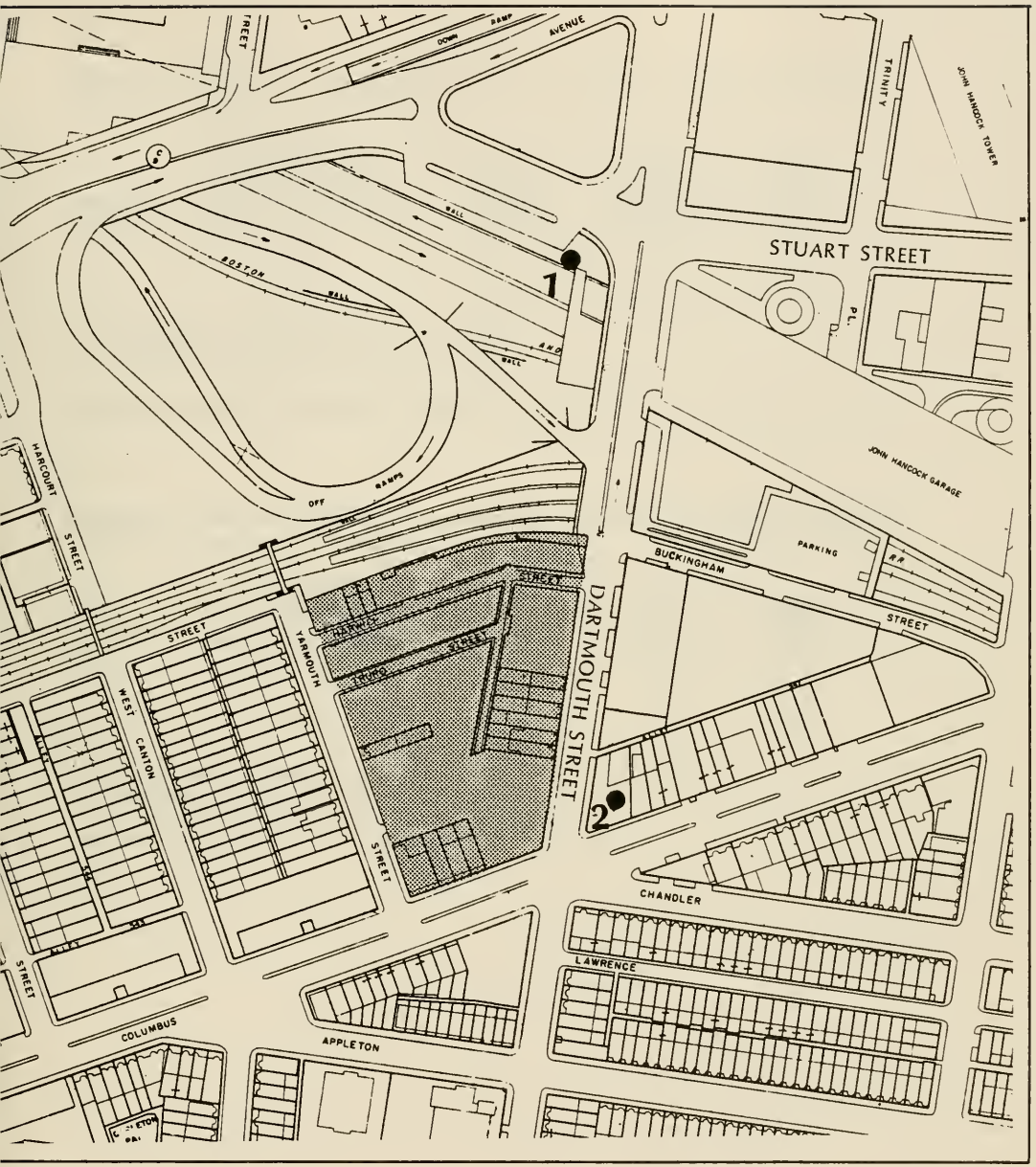
The carbon monoxide (CO) analysis consisted of a comparison of estimated existing and predicted future CO concentrations at specific sensitive receptors with the NAAQS. A sensitive receptor is an area where a person could be exposed to high CO concentrations over an extended period of time. The worst CO conditions will occur at intersections where vehicles idle, accelerate, and decelerate. Therefore, the sensitive receptors at the Tent City site are located at the intersections of Stuart Street and Dartmouth Street and Columbus Avenue and Dartmouth Street (Figure 43). The existing one-hour CO concentrations at Stuart Street and Columbus Avenue, 25.1 ppm and 14.1 ppm, respectively, do not exceed the NAAQS. However, the eight-hour concentrations at both locations, 12.2 ppm and 11.1 ppm, do exceed the NAAQS. These results generally are consistent with those of previous air quality analyses of the Dartmouth Street area (Environmental Research and Technology, Inc. 1979 and Skidmore, Owings and Merrill 1984).

3.9.2 Probable Impacts

The CO analysis results are summarized in Tables 25 and 26.

No-Build Alternative

Carbon monoxide concentrations will drop below the NAAQS for one-hour and eight-hour concentrations by 1988 under No-Build conditions. This decrease will be due to the Federal Motor Vehicle Emissions Control Program and State Inspection and Maintenance Program both of which are directed at reducing automotive emissions. Therefore, air quality conditions affecting the site are projected to be better in 1988 than they are currently.



Project Site

Tent City
Boston, Massachusetts

FIGURE 43
AIR QUALITY SENSITIVE RECEPTORS

Scale in feet
0 200 400

Table 25. Results of one hour microscale analysis of carbon monoxide (parts per million).

Receptor	Worst Case Wind Direction (Degree From North)	1984 a Existing	1988 b No-Build	1988 b Build
1	60-70	25.1	11.6	12.9
2	240-245	14.1	8.7	8.9

a. Background Concentration of 5.0 ppm
b. Background Concentration of 3.5 ppm

NATIONAL AMBIENT AIR QUALITY STANDARD: 35.0 ppm

Table 26. Results of eight hour microscale analysis of carbon monoxide (parts per million).

Receptor	Worst Case Wind Direction (Degree From North)	1984 a Existing	1988 b No-Build	1988 b Build
1	55-70	12.2	8.0	8.1
2	230-245	11.1	7.0	7.5

a. Background Concentration of 3.0 ppm
b. Background Concentration of 2.1 ppm

NATIONAL AMBIENT AIR QUALITY STANDARD: 9.0 ppm

Build Alternative

Upon completion of Tent City, queued vehicles on Stuart Street will result in an eight-hour carbon monoxide concentration of 8.1 parts per million at the Stuart Street/Dartmouth Street intersection. This concentration is below the 9.0 parts per million National Ambient Air Quality Standard. It should be noted that 1984 existing conditions exceed the NAAQS by 3.2 parts per million. Moreover, the one-hour carbon monoxide concentration at this intersection will be well below the one-hour NAAQS. No exceedences of the one-hour and eight-hour NAAQS's will occur at the Columbus Avenue/Dartmouth Street and Stuart Street/Dartmouth Street intersections following completion of Tent City.

The effects of the Tent City parking garage ventilation system were assessed using the methodology described in U.S. Environmental Protection Agency (1985). The results of this assessment indicate that the garage ventilation system will not affect Tent City and adjacent residential units.

The effects of the Copley Place garage and Massachusetts Turnpike vents, located on the roof of Copley Place, on future Tent City residents were assessed by reviewing the data reported in Environmental Research and Technology, Inc. (1979). It was reported that under worst case conditions the Copley Place vents will increase the one-hour background CO concentration at Tent City by 12 percent and the eight-hour concentration by 3 percent. Such increases will not result in an exceedence of the applicable NAAQS at the site.

3.9.3 Mitigation Measures

Although the Build and No-Build CO concentratios do not exceed the eight-hour NAAQS at the Stuart Street/Dartmouth Street intersection some mitigation measures would be in the interests of improving air quality conditions.

Mitigation measures could include:

- enforcement of the parking ban on the north and south side of Stuart Street between Dartmouth Street and the Massaschusetts Turnpike ramp, and

- increase the green cycle time for Stuart Street through movements.

3.10 NOISE

3.10.1 Existing Conditions/Affected Environment

The existing noise conditions at the Tent City site were analyzed using the methodology described in the report published by Bolt, Beranek and Newman (1983). The description of the methodology, calculation sheets, and results are presented in Appendix 7. The results of the analysis were assessed against the Design Noise Levels (DNL's) established by the U.S. Department of Housing and Urban Development. DNL's are characterized as acceptable, normally unacceptable, and unacceptable in accordance with the following criteria.

- Acceptable (DNL not exceeding 65 decibels) - The noise exposure may be of some concern but common building construction will make the indoor environment acceptable, and the outdoor environment will be reasonably pleasant for recreation and play.

- Normally Unacceptable (DNL above 65 but not exceeding 75 decibels) - The noise exposure is significantly more severe. Barriers between the site and prominent noise sources may be necessary to make the outdoor environment acceptable. Special building construction may be necessary to ensure that people indoors are sufficiently protected from outdoor noise.

- Unacceptable (DNL above 75 decibels) - The noise exposure at the site is so severe that the costs of construction necessary to make the indoor noise environment acceptable may be prohibitive, and the outdoor environment still will be unacceptable.

Noise levels in the vicinity of Tent City were analyzed at:

- The northwest corner of the intersection of Dartmouth Street and Columbus Avenue,

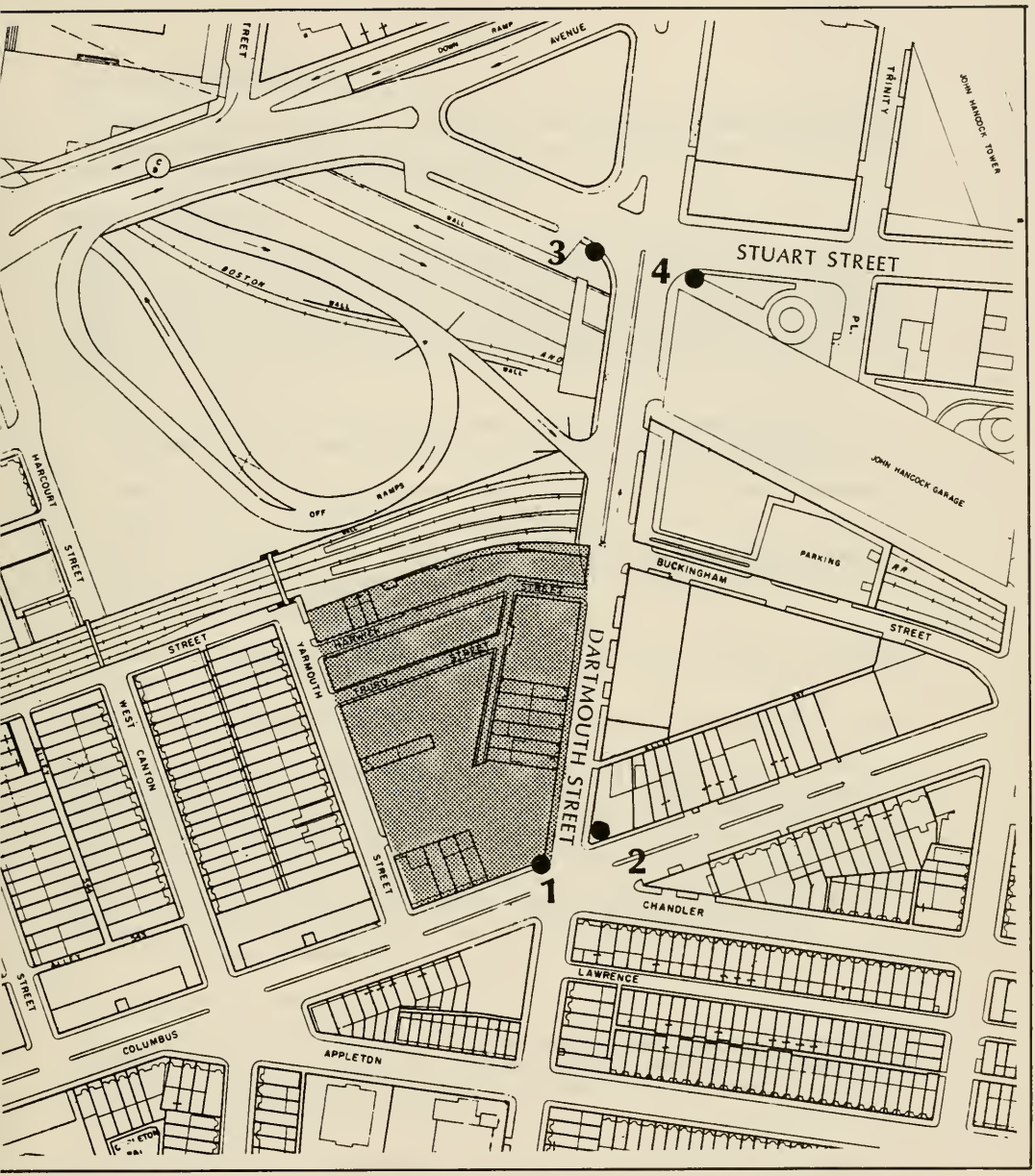
- the northeast corner of the intersection of Dartmouth Street and Columbus Avenue,

- the southwest corner of the intersection of Stuart Street and Dartmouth Street, and

- the southeast corner of the intersection of Stuart Street and Dartmouth Street (Figure 44).

Noise in an urban environment is derived from such sources as aircraft flyover, building equipment, construction activity, and vehicular traffic. Current noise levels at receptors 3 and 4 reach 81 decibels as a result of the high volumes of automobile and truck traffic along Stuart Street and Dartmouth Street.

High volumes of automobile traffic and stop-and-go trucks along Stuart Street and Dartmouth Street resulted in high noise levels of 81 decibels at all locations. Noise levels by 1988 will reach 83 decibels at buildings along these two streets.



Project Site

Tent City
Boston, Massachusetts

FIGURE 44
NOISE RECEPTOR LOCATIONS

Scale in feet
0 200 400

3.10.2 Probable Impacts

By 1988, noise levels in the vicinity of the site will reach 83 decibels due to background traffic growth. This increase will occur even if the Tent City development is not constructed.

Build Alternative

Long-Term - The traffic to be generated by Tent City will not increase noise levels above those which will occur due to the background traffic growth (growth unrelated to the development of Tent City), 83 decibels. However, nearly all the units in the development are protected from noisy conditions along Dartmouth Street and Columbus Avenue due to the following reasons:

- many units are located along Yarmouth Street and the project's internal street placing the units further from the noise source
- additionally, buildings along Dartmouth Street and Columbus Avenue block most of the truck and automobile noise
- units in the townhouse buildings on Dartmouth Street and Columbus Avenue are floor through units making back rooms which face the internal courtyard quieter
- 50% of the units in the midrise building face the internal courtyard and do not abut Dartmouth Street.

These units will have more acceptable noise levels for residential use.

Short-Term - During the construction of Tent City, noise intrusions from equipment and trucks travelling to and from the site will add to the ambient conditions in the vicinity of the site. Noise associated with many of the construction activities will exceed 80 decibels, as measured at the lot line. Pumps, generators, tractors, and other equipment will emit noise levels in the range of 70 to 90 decibels at a distance of 50 feet (Bolt, Beranek and Newman 1971). These levels may exceed the 80 decibel threshold limit for all land uses established by the Air Pollution Control Commission of Boston.

3.10.3 Mitigation Measures

Long-Term - While noise levels along Columbus Avenue and Dartmouth Street are high according to HUD criteria, the double glazed windows that will be installed for energy conservation purposes will help reduce noise impacts to a more acceptable level.

Short-Term - Noise levels generated during construction may be reduced by avoiding the use of diesel-powered equipment and by installing and maintaining mufflers and intake silencers on all appropriate equipment. The impact of increased noise levels may be minimized by restricting construction activity to normal working hours and weekdays.

4.0 UNAVOIDABLE ADVERSE IMPACTS

There will be several unavoidable adverse impacts resulting from the Tent City project.

An unavoidable impact will be the demolition of nine buildings currently on the site, however, this is not considered to be an adverse impact because these buildings will be replaced by buildings with an architectural design that is compatible with the adjacent South End architectural character.

The project will also result in the temporary relocation of approximately 11 households and the potential dislocation of three to five small businesses (with approximately six employees) from the site. However, the members of these households will have the right to return to affordable housing units in accordance with their income.

5.0 SHORT TERM USE OF THE ENVIRONMENT VERSUS LONG TERM PRODUCTIVITY

The existing site is an underutilized parcel in a critical location. Located between the modern, large scale Copley Place and the historic, small scale South End neighborhood, the site is a critical transition area and linkage between the Back Bay and the South End. Existing housing opportunities on the site consist of 11 occupied units inhabited by approximately 15 residents. Current parking opportunities consist of 276 spaces used exclusively by commercial-office tenants.

The Tent City development will include 270 new housing units (75 percent of which will be affordable to low and moderate income households), 698 new parking spaces (129 for residents, 367 for commercial-office users, and 202 for commercial-retail users), and 7,500 square feet of neighborhood retail space. The result will be an elimination of the underutilized condition of the site, a positive response to the need for additional housing opportunities in the South End, an expansion of economic activity in the area (including the creation of new jobs), and an attractive architectural transition from the historic, residential character of the South End to the modern, commercial character of Copley Place. Moreover, the development of Tent City will fulfill a long standing commitment by the City of Boston to develop low and moderate income housing units on the site.

6.0 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Construction of the Tent City development will result in the irreversible and irretrievable commitment of the following resources.

- Energy will be consumed by construction equipment and future utility systems. The estimated energy needs of the completed project are described in Section 3.7.

- Construction materials, including bricks, wood, and finishing materials will be irreversibly committed to the project.

- Some of the existing subsurface fill on the site will be permanently removed to permit construction of the underground garage.

- Groundwater will be permanently displaced from the subsurface volume to be occupied by the garage.

- The project will require a one-time commitment of $3,030,000 in UDAG funding for construction and the permanent commitment of SHARP funds (Massachusetts Housing Finance Agency), Chapter 707 funds (Executive Office of Communities and Development), and/or Neighborhood Development Funds (City of Boston) to subsidize housing costs.

7.0 RELATION OF TENT CITY PARKING GARAGE TO COPLEY PLACE

In his Certificate on the Environmental Notification Form for Tent City dated January 23, 1985, the Secretary of Environmental Affairs raised the issue of the relationship between the proposed use of the 698-space parking garage, and the mitigations of anticipated traffic and parking problems adopted in 1980 during the Copley Place environmental review. This section of the Tent City EIR/EIS addresses that issue. The BRA and Urban Investment Development Company (UIDC) have cooperated with the Tent City Corporation in this aspect of the Tent City environmental assessment as encouraged by the Secretary.

UIDC is the developer of Copley Place, a multi-use office, retail, hotel and housing development abutting the Tent City site. UIDC wishes to expand somewhat the parking spaces that support Copley Place. UIDC also holds title to approximately half of the land on the Tent City site. In anticipation of UIDC's agreement to transfer all of its Tent City land to the BRA, the BRA has designated UIDC as developer of a 698-space parking garage on the subsurface rights for the entire site. The BRA is expected to lease these subsurface rights for an extended time period (99 years) to UIDC. The BRA is also expected to lease for an extended time period (99 years) the air rights to the Tent City Corporation to build the housing and retail portions of the project. UIDC is expected to sublease 129 of the 698 parking spaces to Tent City Corporation for $1 per year for exclusive use by residents of the housing.

The arrangement will provide the land, in-garage parking, and the foundation for the housing and contributes in a substantial way to the ability of Tent City Corporation to achieve its goals of housing affordability.

UIDC will use the 569 parking spaces under its control in the garage (698 total garage spaces less 129 residential spaces) in conjunction with its Copley Place development. The final determination of the use of these 569 commercially oriented spaces has not been made. It is expected that 202-276 spaces will be dedicated for public retail-oriented, hourly fee use; and that 293-367 will be dedicated to office users for long-term, monthly fee use. The traffic and air pollution parts of this EIR/EIS analyze the split of these uses from a "worst case" environmental standpoint, namely 202 hourly, retail-oriented spaces and 367 monthly, office-oriented spaces. This is considered a more severe environmental impact because of the heavier impact that office-oriented parkers have on the peak hour as they leave work in the late afternoon.

This proposed garage at Tent City and its use in conjunction with Copley Place increases the number of parking spaces available to UIDC by 293 beyond the 276 currently in use and run by UIDC on the Tent City site.

Concern about the anticipated traffic and parking impacts of Copley Place in the residential neighborhood next to the development were addressed in the Copley Place EIR/EIS and the Certificate of the Secretary of Environmental Affairs in the Final Environmental Impact Report for Copley Place dated October 30, 1980.

In that document, the Secretary suggested a series of mitigating measures be taken to lessen the anticipated impacts. They included:

- the establishment of a resident parking sticker program for South End residents to prevent Copley Place shoppers and workers from causing a parking problem for residents on neighborhood streets;

- setting parking rates in the Copley Place garages such that all day parkers would not be encouraged to drive to work; "early bird" rates were specifically discouraged;

- monitoring mass transit use to achieve a goal of having 75% of Copley Place employees travel to work using modes other than private automobile, i.e., mass transit.

The following are the actions that have been taken on these recommendations for mitigation, since the completion of the EIR/EIS for Copley Place in 1980.

- A neighborhood parking sticker program has been put into effect in the South End and is enforced strictly. According to a representative of the City of Boston Parking and Traffic Department the resident parking sticker program is considered to be very effective by South End residents and has eliminated the complaints about the unavailability of parking (personal communication, June 5, 1985). In fact, it appears that the parking sticker program and its strict enforcement have effectively kept Copley Place related parkers from creating a parking problem on South End neighborhood streets.

- In setting parking rates for the Copley Place garage, UIDC established a system that makes it very expensive and discourages employees from driving to work and parking all day. Rates are high, and no discount for arriving to park before a certain time exists. UIDC's goal in managing the garage is to keep spaces available to shoppers.

- As part of an effort to monitor employee transit use, UIDC has undertaken a survey of hotel employees in the Westin and Marriott Hotels. This survey shows that approximately 75% of these employees use mass transit to get to and from their jobs.

- Long term employee parking at Copley Place is quite limited. Dedicated employee spaces total approximately 461 in two locations: approximately 185 spaces inside the Copley Place garage and approximately 276 spaces leased by IBM on the surface parking lot at Tent City. There are approximately 5,000 employees at Copley Place.

It appears that the combination of a strictly enforced South End resident parking sticker program, a very limited number of dedicated employee parking spaces, expensive rates for public parking, and convenient mass transit have combined to result in extremely heavy mass transit ridership.

This mass transit ridership is likely to rise even further when the new Orange Line station right at Copley Place opens, because it will supplement the current Green Line Copley and Prudential stations that are two to four blocks away. The delay in the opening of the new Orange Line has meant that mass transit ridership is probably somewhat lower today than it will be after the Orange Line station opens. Further, when the new Orange Line does open, UIDC and Copley Place employers will promote the convenience of the new station in employment recruiting and informational brochures within the development. In addition, the feasibility of selling monthly transit passes at a location in Copley Place will be pursued. At present, monthly passes can be purchased at the Back Bay Post Office 1.5 blocks away.

8.0 LITERATURE CITED

Abt Associates, Inc. and Skidmore, Owings and Merrill. 1979. South End environmental assessment, summary final environmental impact statement. Boston Redevelopment Authority.

Aldrich, H. P. 1979. Preserving the foundations of older buildings. Technology & Conservation, Summer.

Bolt, Beranek and Newman, Inc. 1980. Pedestrian wind environment at Copley Place, Boston, Massachusetts - final report. Bolt, Beranek and Newman, Inc., Cambridge, MA.

Bolt, Beranek and Newman, Inc. 1983. Noise assessment guidelines. U.S. Department of Housing and Development.

Boston Landmarks Commission, 1983. The South End - District Study Committee Report.

Boston Redevelopment Authority. 1980. 1970 U.S. Census of Population and Housing.

Boston Redevelpoment Authority. 1980. Household Survey conducted by the Center for Survey Research.

Boston Redevelopment Authority. 1979. South End district profile and proposed 1979-1981 neighborhood improvement program. Boston Redevelopment Authority.

Boston Redevelopment Authority. 1981. Downtown Boston Parking Programs. Traffic and Parking Department, City of Boston.

Boston Redevelopment Authority. 1983. Boston population and housing by neighborhood areas, 1980. Boston Redevelopment Authority.

Burchell, R. W. and D. Listokin. 1980. Practitioners guide to fiscal impact analysis. Center for Urban Policy Research, Rutgers University.

Commonwealth of Massachusetts, Department of Environmental Quality Engineering. 1983. The Sate Environmental Code, Title 5: disposal of sanitary sewage.

Environmental Research & Technology, Inc. 1979. Copley Place air quality impact study. Urban Investment and Development Company.

Haley and Aldrich, Inc. 1982. Report on preliminary geotechnical investigation proposed parking garages, Boston, Massachusetts. Haley and Aldrich, Inc.

Haley and Aldrich, Inc. 1983. Report on preliminary geotechnical investigation Tent City development, Boston, Massachusetts. Haley and Aldrich, Inc.

Haley and Aldrich, Inc. 1985. Report on groundwater in Back Bay Boston, Boston, Massachusetts. Haley and Aldrich, Inc.

HMM Associates, Inc. 1980. Copley Place - final environmental impact report/environmental impact statement. City of Boston, Office of Federal Compliance.

HMM Associates, Inc. 1984. Hynes Auditorium. Draft environmental impact report. Massachusetts Convention Center Authority.

HMM Associates, Inc. 1984. Hynes Auditorium. Final environmental impact report. Massachusetts Convention Center Authority.

Highway Research Board. 1965. Highway capacity manual. Highway Research Board.

Institute of Transportation Engineers. 1982. "Trip generation information report." Institute of Transportation Engineers.

O'Brien, M. C., and M. Siegal. 1983. The changing household composition of Boston, it's neighborhoods and selected minority groups: 1970-1980. Boston Redevelopment Authority.

O'Brien, M. C. 1982. Boston and its neighborhoods, analysis of demographic and housing data from the 1980 Boston Redevelopment Authority household survey. Boston Redevelopment Authority.

Salvato, J. A. Jr. 1982. Environmental engineering and sanitation. John Wiley and Sons, Inc., New York.

Skidmore, Owings & Merrill. 1984. 500 Boylston Street project-BRA draft environmental impact report. New England Mutual Life Insurance Company, Gerald D. Hines Interests, Inc.

Skidmore, Owings & Merrill. 1985. 500 Boylston Street project-BRA final environmental impact report. New England Mutual Life Insurance Company, Gerald D. Hines Interests, Inc.

Transportation Research Board. 1980. Interim materials of highway capacity. Transportation Research Board Circular 212.

Urban Land Institute. 1983. Shared parking. Urban Land Institute.

Whitehill, W.M. 1959. Boston: A topographic history. Belknap Press, Harvard University, Boston, MA.

9.0 LIST OF PREPARERS

This EIS/EIR was prepared by Sasaki Associates, Inc., Watertown, Massachusetts. Professional staff from Greater Boston Community Development, Inc. also assisted in the preparation of this document with the assistance of Tent City Corporation. Sasaki Associates would like to recognize Richard Mertens, Environmental Review Officer, Boston Redevelopment Authority and Stephen Davis, Executive Office of Environmental Affairs (MEPA Unit) for their assistance and advice in preparing this EIS/EIR. Sasaki also would like to recognize Paul Dudek of Goody, Clancy Associates for assistance in preparing the visual/ aesthetic impacts and shadow impacts sections.

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- Barry M. Pell, P.E., Associate, Traffic Engineer and Transportation Planner, traffic impacts, Bachelor of Science in Civil Engineering, Master of Science in Civil Engineering.

- David Samuelson, P.E., Traffic Engineer, traffic impacts, Bachelor of Science in Civil Engineering, Master of Science in Civil Engineering.

- Bradford O. Saunders, Associate, cultural, energy and wind impacts, Bachelor of Arts in Biology and Environmental Science, Master of Science in Wildlife Management.

- Rebecca Longley, Associate, air and noise impacts, Bachelor of Arts in Biology, Graduate Study in Air Quality Analysis.

- Stanton A. Lyman, AIA, aesthetic/visual and cultural impacts, Bachelor of Arts in History, Bachelor of Science in Civil Engineering, Bachelor of Architecture, and Master of Architecture.

- James P. Doolin, social/economic and water and sewer impacts, Bachelor of Science in Natural Resources, Master of Regional Planning.

- Maurice Ponti, Geologist, geology and groundwater impacts, Bachelor of Science in Geological Science.

- Neil Cavanagh, PE, Associate, water and sewer impacts, Bachelor of Civil Engineering, Master of Geotechnical Engineering.

Project coordination and document review was provided by Joshua Posner, Senior Development Specialist, GBCD, Inc. Robert Rush of Tent City Corporation, Inc. also assisted in reviewing this document.

Sasaki Associates would like to gratefully acknowledge the assistance received from the following organizations and firms in the preparation of this document:

- Boston Redevelopment Authority
- Boston Water and Sewer Commission
- Massachusetts Department of Environmental Quality Engineering, Division of Air Quality Control.
- Goody/Clancy Associates, Inc.
- Haley and Aldrich, Inc.
- Zaldastani Associates, Inc.
- George B. Macomber Company
- R. G. Vanderweil Engineers
- Technology Integration and Development Group, Inc.

10.0 LIST OF AGENCIES AND PERSONS TO WHOM COPIES HAVE BEEN SENT

James Hoyte, Secretary
Executive Office of Environmental Affairs
100 Cambridge Street
Boston, MA 02202

State Clearinghouse
100 Cambridge Street, 9th Floor
Boston, MA 02202

Metropolitan Area Planning Council
110 Tremont Street, 5th Floor
Boston, MA 02108

Massachusetts Historical Commission
80 Boylston Street
Boston, MA 02116
Attention: Valeria Talmage

Department of Environmental Quality Engineering
Northeast Regional Office
Air Quality Section
323 New Boston Street
Woburn, MA 01801

U.S. Environmental Protection Agency
Air Management Division
JFK Federal Building
Boston, MA 02203
Attention: Thomas Wholly

U.S. Department of Housing and Urban Development
Regional Office
Attention: Mr. John C. Mongan
Regional Administrator - Regional Housing Commissioner
JFK Federal Building
Boston, MA 02203

U.S. Department of the Interior
Keeper of the National Register
Office of Archeology and Historic Preservation
Washington, DC 20240

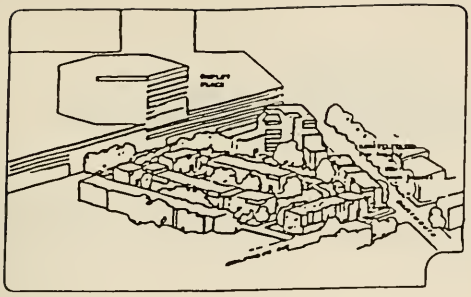
Boston Water and Sewer Commission
10 Post Office Square
Boston, MA 02109
Attention: Charles Button

City of Boston
The Environment Department
Boston City Hall, Room 805
Boston, MA 02201
Attention: Air Pollution Control Commission

Ellis Neighborhood Association, Inc.
52 Chandler Street
Boston, MA 02116
Attention: Kenneth J. Gritter

The Boston Preservation Alliance
45 School Street
Boston, MA 02108
Attention: Susan Park

11.0 ENVIRONMENTAL NOTIFICATION FORM AND LETTERS OF COMMENT



TENT CITY

The Tent City Corporation

32 Rutland Street
Boston, MA 02118
(617) 262-4103

December 14, 1984

Mr. James S. Hoyte
Secretary of Environmental Affairs
Leverett Saltonstall Building
20th Floor
100 Cambridge Street
Boston, MA 02202

Dear Secretary Hoyte:

Enclosed please find an Environmental Notification Form for the Tent City development in the South End section of Boston. As you will note, we are looking forward to the Scoping Session, at which time you will determine whether a formal Environmental Impact Report is required and if so what it will cover.

The Tent City Corporation is an outgrowth of the protest which dramatized the need for affordable housing on this site in the South End in the late 1960's. As such, TCC has been extremely sensitive to the environmental and community issues involved in this proposed development. We believe the design and development program can successfully move this project to reality after sixteen years of community planning and and a series of false starts which could not achieve feasibility. Now that the basic conditions for a successful project are in place, we are hopeful that we can begin work prudently and expeditiously.

We look forward to working with you.

Very truly yours,

Joan Tighe (JT)

Joan Tighe,
Chairperson

JT:jk

Enc.

copies of ENF to: Secretary, Executive Office of Environmental Affairs (2)
Dept. of Environmental Quality Engineering (2)
Boston Redevelopment Authority
Dept. of Community Affairs
Metropolitan Area Planning Council
Massachusetts Historical Commission
Department of Public Works, District 8
DEQE, Met. Boston/Northeast Regional Office

31

APPENDIX A
COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS

ENVIRONMENTAL NOTIFICATION FORM

Do not write in this space

SUMMARY

A. Project Identification
1. Project Name Tent City (Parcels 11A and 11B)
2. Project Proponent Tent City Corporation
Address 32 Rutland St., Boston, MA 02118

B. Project Description: (City/Town(s) Boston South End
1. Location within city/town or street address Block bounded by Dartmouth St., Columbus Ave., Yarmouth St. and Southwest Corridor
2. Est. Commencement Date: Summer 1985 Est. Completion Date: 1987
Approx. Cost $ 47,800,000 Current Status of Project Design: 15 % Complete

C. Narrative Summary of Project
Describe project and give a description of the general project boundaries and the present use of the project area. (If necessary, use back of this page to complete summary).

Tent City Corporation plans to develop urban renewal Parcel 11 known as Tent City. Plans call for the development of approximately 270 units of housing, 5,000 to 10,000 square feet of community/retail space, and an underground parking garage for up to 698 cars; 116-129 spaces will be dedicated to residents of the housing, while 569 spaces will be for commercial use.

The site in Boston covers the block bounded by Dartmouth St., Columbus Ave., Yarmouth St. and the Southwest Corridor Deck abutting Copley Place. The site is largely vacant and presently used for parking. Several uninhabited buildings exist on the perimeter of the site, along with a few occupied buildings.

The plan is to construct 270 units of mixed income housing on the site. 25% of the units will be subsidized for low income families, 50% for moderate income, and the remaining 25% of the units will be market rate. The housing will be arranged mainly along the streets in 4-story buildings, with facades designed to match typical South End row houses. At the corner of Dartmouth St. and the Southwest Corridor Deck the residential buildings will step up to 5-10 stories, reflecting the scale of the adjacent Copley Place. The community/retail space will be located near the corner of Dartmouth St. and the Southwest Corridor Deck.

Copies of this may be obtained from:
Name: Robert Rush Firm/Agency: Tent City Corporation
Address: 32 Rutland St., Boston, MA 02118 Phone No. 262-4103

THIS IS AN IMPORTANT NOTICE. COMMENT PERIOD IS LIMITED.
For Information, call (617) 727-5830

Use This Page to Complete Narrative, if necessary.

This project is one which is categorically included and therefore automatically requires preparation of an Environmental Impact Report: YES_____* NO_____*

*Decision to follow scoping conference

). Scoping (Complete Sections II and III first, before completing this section.)

1. Check those areas which would be important to examine in the event that an EIR is required for this project. This information is important so that significant areas of concern can be identified as early as possible, in order to expedite analysis and review.

	Construction Impacts	Long Term Impacts		Construction Impacts	Long Term Impacts
Space & Recreation			Mineral Resources		
ical		X	Energy Use		
eological			Water Supply & Use		X
ies & Wildlife			Water Pollution		
ition, Trees			Air Pollution	X	
Biological Systems			Noise	X	
Wetlands			Traffic	X	X
al Wetlands or Beaches			Solid Waste	X	
Hazard Areas			Aesthetics		X
cals, Hazardous Substances,			Wind and Shadow		X
gh Risk Operations			Growth Impacts		
gically Unstable Areas			Community/Housing and the Built Environment		X
ltural Land					
(Specify)_____					

2. List the alternatives which you would consider to be feasible in the event an EIR is required.

The no-build alternative would be examined in an EIR.

E. Has this project been filed with EOEA before? Yes _____ No X
If Yes, EOEA No. _____ EOEA Action? _____

F. Does this project fall under the jurisdiction of NEPA? Yes X No _____
If Yes, which Federal Agency? HUD NEPA Status? None

G. List the State or Federal agencies from which permits will be sought:

Agency Name	Type of Permit
Boston Redevelopment Authority	Land Disposition Agreement Potential Chapter 121 A

H. Will an Order of Conditions be required under the provisions of the Wetlands Protection Act (Chap. 131, Section 40)?
Yes _____ No X
DEQE File No., if applicable: _____

I. List the agencies from which the proponent will seek financial assistance for this project:

Agency Name	Funding Amount
HUD (UDAG)	$9,968,000
Massachusetts Housing Finance Agency (SHARP)	$ 401,250/year
Executive Office of Communities & Development (Chapter 707)	$ 545,000/year
City of Boston (Neighborhood Development funds)	$ 283,000/year, on average

PROJECT DESCRIPTION

A. Include an original 8½ x 11 inch or larger section of the most recent U.S.G.S. 1:24,000 scale topographic map with the project area location and boundaries clearly shown. Include multiple maps if necessary for large projects. Include other maps, diagrams or aerial photos if the project cannot be clearly shown at U.S.G.S. scale. If available, attach a plan sketch of the proposed project. See attachment 2

B. State total area of project: 3.3 acres
Estimate the number of acres (to the nearest 1/10 acre) directly affected that are currently:

1. Developed ..... 0.3 acres
2. Open Space/Woodlands/Recreation ____ acres
3. Wetlands ..... ____ acres
   Vacant 3.0 acres
4. Floodplain ..... ____ acres
5. Coastal Area ..... ____ acres
6. Productive Resources
   Agriculture ..... ____ acres
   Forestry ..... ____ acres
   Mineral Products ..... ____ acres

C. Provide the following dimensions, if applicable:
Length in miles _____ Number of Housing Units 270 Number of Stories 4-10

	Existing	Immediate Increase Due to Project
Number of Parking Spaces	276	422
Vehicle Trips to Project Site	414	633

Estimated Vehicle Trips past project site 11,500 ADT 0-633 See attach.

D. If the proposed project will require any permit for access to local or state highways, please attach a sketch showing the location of the proposed driveway(s) in relation to the highway and to the general development plan; identifying all local and state highways abutting the development ; and indicating the number of lanes, pavement width, median strips and adjacent driveways on each abutting highway. and indicating the distance to the nearest intersection. N/A

SESSMENT OF POTENTIAL ADVERSE ENVIRONMENTAL IMPACTS

Instructions: Consider direct and indirect adverse impacts, including those arising from general construction and operations. For every answer explain why significant adverse impact is considered likely or unlikely to result.

Also, state the *source* of information or other basis for the answers supplied. If the source of the information, in part or in full, is not listed in the ENF, the preparing officer will be assumed to be the source of the information. Such environmental information should be acquired at least in part by field inspection.

Open Space and Recreation

1. Might the project affect the condition, use or access to any open space and/or recreation area?
   Yes _____ No X

Explanation and Source: The site is largely vacant; used mainly for parking. t has no recreational value at present. The project will occupy the site, liminating the open space.
Source: Tent City Corporation.

Historic Resources

1. Might any site or structure of historic significance be affected by the project? Yes X No _____

Explanation and Source: The site is in the South End Landmark District, but is not included in the portion thereof on the National Register. The existing buildings on the site reflect the character of the South End, and may have some value in that respect. Although a number of the existing buildings are burned-out or condemned, and some will be razed, four of the existing structures will remain. The new building facades and massing have been designed specifically to reflect the historic row houses of the South End and the project should have a positive effect on the South End Landmark District by replacing the current vacant lot with buildings compatible with those in the South End. The Boston Landmarks Commission adopted the following language with respect to flexibility of height standards and demolition for the Tent City site: "The height of development on this parcel shall provide a transition between the height of adjacent South End row houses and the height of the Copley Place project along the Southwest Corridor deck. Demolition of the existing properties on Dartmouth Street may be considered if required to develop a sound over-all site plan." Source: Tent City Corporation; Boston Landmarks Commission

2. Might any archaeological site be affected by the project? Yes _____ No X

Explanation and Source:

No archaeological sites will be affected by the project. The project area was filled, relatively recently in history, and has been disturbed by construction in the past. In addition, there was no archaeological interest in the adjacent Copley Place site.

Source: Copley Place EIR/EIS, 1980.

Ecological Effects

1. Might the project significantly affect fisheries or wildlife, especially any rare or endangered species?
   Yes _____ No X

Explanation and Source:

The site is currently devoid of fisheries and wildlife, rare or otherwise.

Source: Tent City Corporation

2. Might the project significantly affect vegetation, especially any rare or endangered species of plant?
Yes _____ No X
(Estimate approximate number of mature trees to be removed: _____)

Explanation and Source:
The site is urban in nature containing only a few scattered trees and weeds. It does not provide a suitable habitat for any rare or endangered species of plant as listed by the Massachusetts Audubon Society (October 1973).

Source: Site inspection by Tent City Corporation

3. Might the project alter or affect flood hazard areas, inland or coastal wetlands (e.g., estuaries, marshes, sand dunes and beaches, ponds, streams, rivers, fish runs, or shellfish beds)? Yes _____ No X

Explanation and Source:
The project site is not in a flood hazard area or wetland.

Source: Boston Zoning Department

4. Might the project affect shoreline erosion or accretion at the project site, downstream or in nearby coastal areas? Yes _____ No X

Explanation and Source:
The site is well removed from any shoreline or rivers. No potential for shoreline erosion or accretion exists.

Source: Tent City Corporation

5. Might the project involve other geologically unstable areas? Yes _____ No X

Explanation and Source:
The U.S. Geological Survey places Boston, and most of southern New England in an area of some seismic risk. This site is no different than most others in this respect.

Source: "New England Earthquakes," Weston Geophysical

). Hazardous Substances

1. Might the project involve the use, transportation, storage, release, or disposal of potentially hazardous substances?
Yes _____ No X

Explanation and Source:
The project involves construction of primarily residential units along with some retail space and an underground garage. It will not involve the handling of any potentially hazardous substances.

3. Will the project generate sanitary sewage? Yes X No ____

If Yes, Quantity: 37,500 gallons per day

Disposal by: (a) Onsite septic systems ..... Yes ____ No X
(b) Public sewerage systems ..... Yes X No ____
(c) Other means (describe) ____

Based on a sewage flow estimate of 35 gallons per day per resident, this projec will generate up to approximately 33,750 GPD of sanitary waste.

Source: Tent City Corporation

4. Might the project result in an increase in paved or impervious surface over an aquifer recognized as an important present or future source of water supply? Yes ____ No X

Explanation and Source:

The site is partially paved in its existing condition. In addition, the project is not over an aquifer recognized as a water source since Boston uses no local groundwater supply.

Source: EOEA Water Supply Policy Statement, 1978

5. Is the project in the watershed of any surface water body used as a drinking water supply?
Yes ____ No X

Are there any public or private drinking water wells within a 1/2-mile radius of the proposed project?
Yes ____ No X

Explanation and Source:

The Boston Water and Sewer Commission supplies water for the City of Boston through the MDC System. This system is supplied by the Quabbin and Wachusett Reservoirs located in the north-central part of the state. There is no drinking water supply near the site.

Source: Copley Place EIR/EIS, 1980

6. Might the operation of the project result in any increased consumption of water? Yes X No ____

Approximate consumption 37,500 gallons per day. Likely water source(s) BWSC/MDC

Explanation and Source:

Water for the project will be provided by the MDC through the Boston Water and Sewer Commission. The main sources of water are the Quabbin and Wachusett Reservoirs.

Source: Copley Place EIR/EIS, 1980/

7. Does the project involve any dredging? Yes ____ No X

If Yes, indicate:
Quantity of material to be dredged ____
Quality of material to be dredged ____
Proposed method of dredging ____
Proposed disposal sites ____
Proposed season of year for dredging ____

Explanation and Source:

The project will not require any dredging.

Source: Tent City Corporation

G. Air Quality

1. Might the project affect the air quality in the project area or the immediately adjacent area?
Yes _____ No __X__

Describe type and source of any pollution emission from the project site.

During construction, measures will be taken to minimize dust. There will be no major direct source of air pollutants associated with the project. Traffic associated with the increased parking capacity will be an indirect source of pollutants. It is not expected that this traffic related air pollution will have a significant effect on air quality, or cause exceedence of MAAQS or NAAQS standards. Existing CO levels in the vicinity of the project are well below the standards. Source: Copley Place EIR/EIS, 1980

2. Are there any sensitive receptors (e.g., hospitals, schools, residential areas) which would be affected by any pollution emissions caused by the project, including construction dust? Yes __X__ No _____

Explonation and Source:

The Southwest Corridor Deck is a passive recreation area abutting the site. Residences exist on adjacent blocks.

Source: Tent City Corporation

3. Will access to the project area be primarily by automobile? Yes _____ No __X__

Describe any special provisions now planned for pedestrian access, carpooling, buses and other mass transit.

Given the urban nature of the setting, it is expected that access to the residential portion of the project will be mainly by foot and public transportation. Access to the garage will be by automobile. Access to the parking will be from Dartmouth Street.

Source: Tent City Corporation

I. Noise

1. Might the project result in the generation of noise? Yes __X__ No _____

Explanation and Source:
(Include any source of noise during construction or operation, e.g., engine exhaust, pile driving, traffic.)

The project will generate noise during construction, especially during pile driving activities. Traffic generated by the project is not expected to cause a noticeable increase in noise over the existing peak Leq of about 72 dBA.

Source: Copley Place EIR/EIS, 1980.

2. Are there any sensitive receptors (e.g., hospitals, schools, residential areas) which would be affected by any noise caused by the project? Yes __X__ No _____

Explanation and Source:

The residences located on adjacent blocks will be affected by construction noise from the project site.

Source: Tent City Corporation

I. Solid Waste

1. Might the project generate solid waste? Yes X No ____

Explanation and Source:
(Estimate types and approximate amounts of waste materials generated, e.g., industrial, domestic, hospital, sewage sludge, construction debris from demolished structures.)

Solid waste will be primarily domestic in nature. Removal of domestic waste is by private contractors under contract to the City. Removal of waste from the retail areas will be the responsibility of individual owners. Some construction debris will also be generated from demolished structures.

Source: Tent City Corporation

J. Aesthetics

1. Might the project cause a change in the visual character of the project area or its environs?
Yes X No ____

Explanation and Source: The proposed project will greatly improve the asthetic characteristics of the site. The currently dilapidated structures and vacant lot will be replaced throughout most of the site by new townhouse structures similar to those in the South End, while a taller building in the northwest corner of the site will form a visual transition to the tall buildings in Copley Place.

2. Are there any proposed structures which might be considered incompatible with existing adjacent structures in the vicinity in terms of size, physical proportion and scale, or significant differences in land use?
Yes ____ No X

Explanation and Source: The site is surrounded by row houses in the city's South End and by Copley Place across the Southwest Corridor Deck. The new buildings will be designed to resemble South End row houses. At one corner, adjacent to Copley Place, the buildings will step up to 11 stories to be compatible with Copley Place. It is expected that most parking will be below ground and will, therefore, not be visible from the street and will, therefore, not be incompatible with existing or adjacent structures. Source: Tent City Corporation

3. Might the project impair visual access to waterfront or other scenic areas? Yes ____ No X

Explanation and Source:

The project site is not adjacent to a waterfront nor will it impair visual access to a waterfront or other scenic area.

Source: Tent City Corporation

K. Wind and Shadow

1. Might the project cause wind and shadow impacts on adjacent properties? Yes X No ____

Explanation and Source:
The project will create new shadows due to the stepped up building at the northeast corner of the site. These shadows will fall mainly on the entrance to the new mall at Copley Place, and on part of the Southwest Corridor Deck.

Source: Tent City Corporation

IV. CONSISTENCY WITH PRESENT PLANNING

A. Describe any known conflicts or inconsistencies with current federal, state and local land use, transportation, open space, recreation and environmental plans and policies. Consult with local or regional planning authorities where appropriate.

There are no conflicts between this plan and land use plans affecting the site. In fact, the site has long been an urban renewal parcel included in the South End urban renewal plan. The Boston Redevelopment Authority plans call for a subsidized housing project to occupy the site. Therefore, the proposed housing is in keeping with stated planning policy.

V. FINDINGS AND CERTIFICATION

A. The notice of intent to file this form has been/will be published in the following newspaper(s) :

(Name) Boston Herald (Date) 12/13/84
South End News 12/20/84

B. This form has been circulated to all agencies and persons as required by Appendix B.

December 6, 1984 Joan E. Tighe
Date Signature of Responsible Officer or Project Proponent
Chairperson - Joan Tighe
President - Kenneth Kruckemeyer
Tent City Corporation
Name (print or type)
Tent City Corporation
Address 32 Rutland Street
Boston, MA 02118

Telephone Number

Louise Elving Louise Elving
Date Signature of person preparing ENF (if different from above)
Greater Boston Community Development
79 Milk Street
Name (print or type)
Boston, MA 02109
Address

Telephone Number 482-6553

Attachment 1 -- Supplementary Material to II.C. - Estimated Vehicle Trips Past Project Site

The proposed site has immediate vehicular access from three adjacent streets: Yarmouth Street, Columbus Avenue and Dartmouth Street, and it ties into a network of city-wide and regional accesss roads including the nearby Southeast Expressway, Storrow Drive, and the Massachusetts Turnpike. It is proposed that both residential and commercial parking in the underground garage be served by a single vehicular access off Dartmouth Street, which is already a major traffic thoroughfare. In addition, there will be automobile drop-off access to the housing via a new street that will run off Yarmouth Street and form a loop street internal to the site. The site is also served by public transportation: the Copley subway stop on the MBTA line is two-and- one-half blocks north of the site, while several buses run along Tremont Street, which is one-and-one-half blocks to the south.

Adequate parking for the housing will be provided via approximately 39 spaces on grade and 116 spaces in the underground garage, for a total of 155 spaces. The remaining underground parking will be available commercially.

The public streets that are now internal to the project site, particularly Harwich and Truro Streets, are badly in disrepair and have been partially resurfaced for use as a parking lot so that they are no longer publicly accessible. This condition will be rectified as part of the proposed project because the public street within the site will be realigned to fit with the design of the housing and completely rebuilt.

The traffic flow by the Tent City site and impact of parking have been examined in several recent studies from which the following information on traffic volumes and the impact of the proposed project have been gathered. Data on the existing traffic volume around the site have been taken from data recently compiled for the Draft EIR for the nearby Hynes Auditorium; based upon data compiled for this document, there are currently 11,500 average daily vehicle trips past the site on Dartmouth Street. These data include traffic that currently goes to the Tent City site for the 276 grade level parking spaces that are now on it and are leased commercially. This means that the most traffic that the proposed new garage -- with up to a maximum of 698 parking spaces -- would add to existing

conditions is the traffic for an additional 422 parking spaces. If there is an average of one-and-one-half round trips per day for each of these new spaces,* then an 633 additional vehicle trips would be made to the site once this garage is built. This increased number of vehicle trips would increase the average daily traffic past the site on Dartmouth Street by 5.6 percent, based upon the data compiled for the Draft EIR for the nearby Hynes Auditorium site.

However, one analysis of the project site has concluded that a parking garage of the size proposed for the Tent City site would not increase the traffic above that already assumed in the Final EIR/EIS for the adjacent Copley Place.

This analysis is contained in the attached memorandum prepared by the Boston Redevelopment Authority staff, dated May 9, 1983. In brief, it states that the Copley Place Final EIR/EIS made it clear that the parking demand generated by that project would exceed the available supply by 300 to 500 spaces.** "This excess demand is included in all the traffic volume information and is considered to be absorbed in non-Copley parking supply." Further, the Copley Place Final EIR/EIS allows for 1,200 employee vehicle trips per day to that site for which no employee parking spaces are allocated.*** Therefore, the BRA staff concluded that the Copley Place Final EIR/EIS covered and assumed the presence on the streets in 1985 of the additional traffic that would be generated by a new garage with an additional 500 spaces. Because the proposed Tent City garage would add only 422 spaces to the existing supply, the traffic that it generates was already counted in the Copley Place EIR/EIS and so will not increase the average daily traffic above that projected when Copley Place was reviewed and accepted.

---

*One-and-one-half round trips per day in the commercial spaces is based upon the following use projection:

Monday - Friday or 260 days per year:	1.5 parkers per day or	390 parkers/year
Saturday or 52 days per year:	2.0 parkers per day or	104 parkers/year
Sundays or 52 days per year:	0.5 parkers per day or	26 parkers/year
Total:		520 parkers/year or 1.42 parkers per day for 365 days

**See pages 7-92 to 7-94 of "Copley Place Final EIR/EIS."

***See Table 7.4-8 on page 7-54 and pages 7-92 to 7-94 in "Copley Place Final EIR/EIS."

INTER-OFFICE COMMUNICATION

TO: Richard Garver

FROM: Alfred Howard

DATE: May 9, 1983

SUBJECT: COPLEY PLACE AND THE "TENT CITY" PARKING PROPOSAL

This memo is intended to provide some background and perspective on the Copley Place tenant parking associated with the proposed development of the Tent City site on Dartmouth Street.

Copley Place Parking Supply and Demand

There is some justification for UIDC's desire to create additional parking for tenants of Copley Place, particularly office. The available supply, as embedded in a conceptual parking freeze permit, and now under construction on the site is:

Space Category	Number of Spaces
Commercial (under freeze)	860
Employee (freeze exemption)	none
Hotel (freeze exemption)	527
Residential (freeze exemption)	45
Total	1,432

The parking demand varies according to reasonable assumptions, but is estimated in the EIR to exceed supply by 300 to 500 spaces. This excess demand is included in all the traffic volume information and is considered to be absorbed in non-Copley parking supply. The only problem is that we have virtual parking saturation during peak periods today and are seeking ways of satisfying the demands of an expanded Hynes Auditorium.

UIDC, apart from the general shortfall problem, is placed in the position of having no parking supply available for assignment to tenants.

Impact of Proposed Garage

There are two general ways of assesing the impact of a garage on the Tent City site serving Copley Place tenants in consonance with the EIR. One is to say that the traffic associated with the first 300 - 500 spaces (estimated parking shortfall) is already included in the EIR traffic analyses, and that additional spaces would add to the EIR volumes. The other, less worrisome approach would be to say that even the traffic associated with a garage of 1100 additional spaces is accounted for, since the EIR allows for 1200 employee vehicle trips per day for which no employee spaces are allocated. This would mean that the particular traffic using the new garage would already be covered in the EIR.

Given the range of interpretation that the EIR affords, both to total traffic, type and time of day, I think it would be reasonable to simply assume as a compromise between extremes that a shortfall of about 500 spaces is already embraced in the EIR moving traffic estimations. Since the current garage proposal is for 1100 spaces (276 of which would be commercial, incidentally), this means that the effect of 600 spaces should be added to the EIR volumes. These would be judged to all be in the designated space or all-day category. This has the maximum effect on peak-hour traffic.

These assumptions, considered possibly a bit heavy on traffic estimates, would have the following effects:

	Copley EIR Estimate	Increase from Proposed Garage	% Increase
Average Daily Vehicular Traffic*	11,400	1,200	11
P.M. Peak Hour Traffic*	1,070	330	31

Thus the addition of employee spaces can be seen to have the expected effect of increasing Copley traffic more in the peak hour, 31%, then during the whole day, amounting to 11%. The addition is not large relative to total general traffic in the area, as will be seen.

Traffic Distribution on Area Streets

The total traffic destined for Copley Place was assigned to various approach corridors and distributed to area streets, as set forth in the EIR. The EIR assigned about 24% of all Copley traffic to the South End "gateway" streets of Columbus/Tremont, Massachusetts Avenue, East Berkeley Street and Herald Street. On this basis, it might be expected that the proposed new garage would add another 80 vehicles per P.M. peak hour (330 x .24) on South End streets. This represents a car every 45 seconds to be distributed on all affected streets.

In terms of total traffic (Copley Place and general) in the P.M. peak hour the maximum impact would be on the intersection of Dartmouth Street and Stuart Street where the proposed garage would increase total traffic by 14% over EIR projections. At Dartmouth Street and Columbus Avenue the increase would only be less than 3%. In general the peak hour increment would be under 5% of EIR estimates, with the probable sole exception of Stuart and Dartmouth, noted above (14%).

If the garage estimates turned out to be somehow low and the location caused a warping of access and egress routes based toward Dartmouth and Columbus, impacts would increase. However, if one multiplied the estimated Dartmouth Street component by a factor of 3 to 4, the P.M. peak-hour addition to EIR predictions would only be around 10% of those predictions.

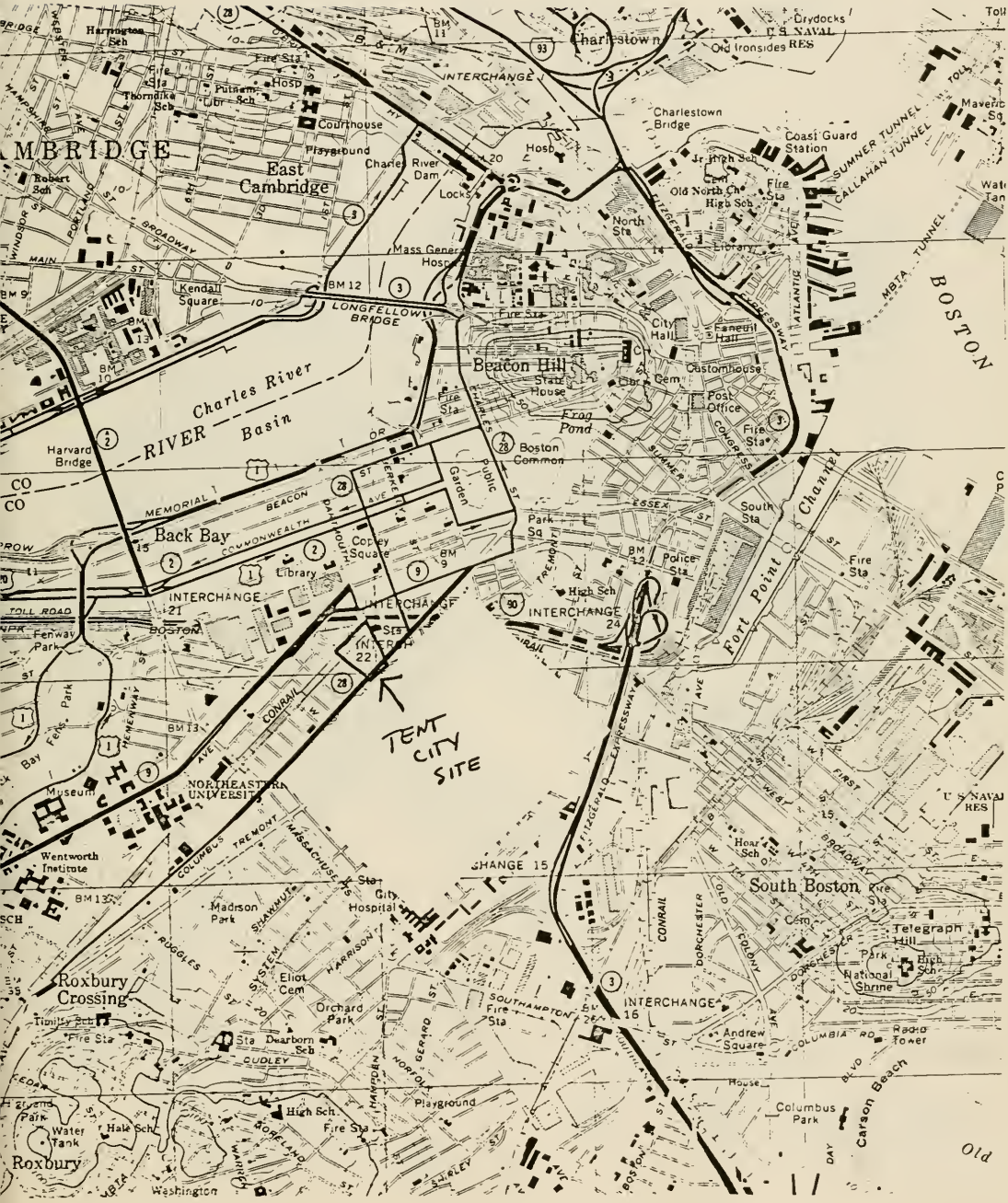
*(Arrivals and departures)

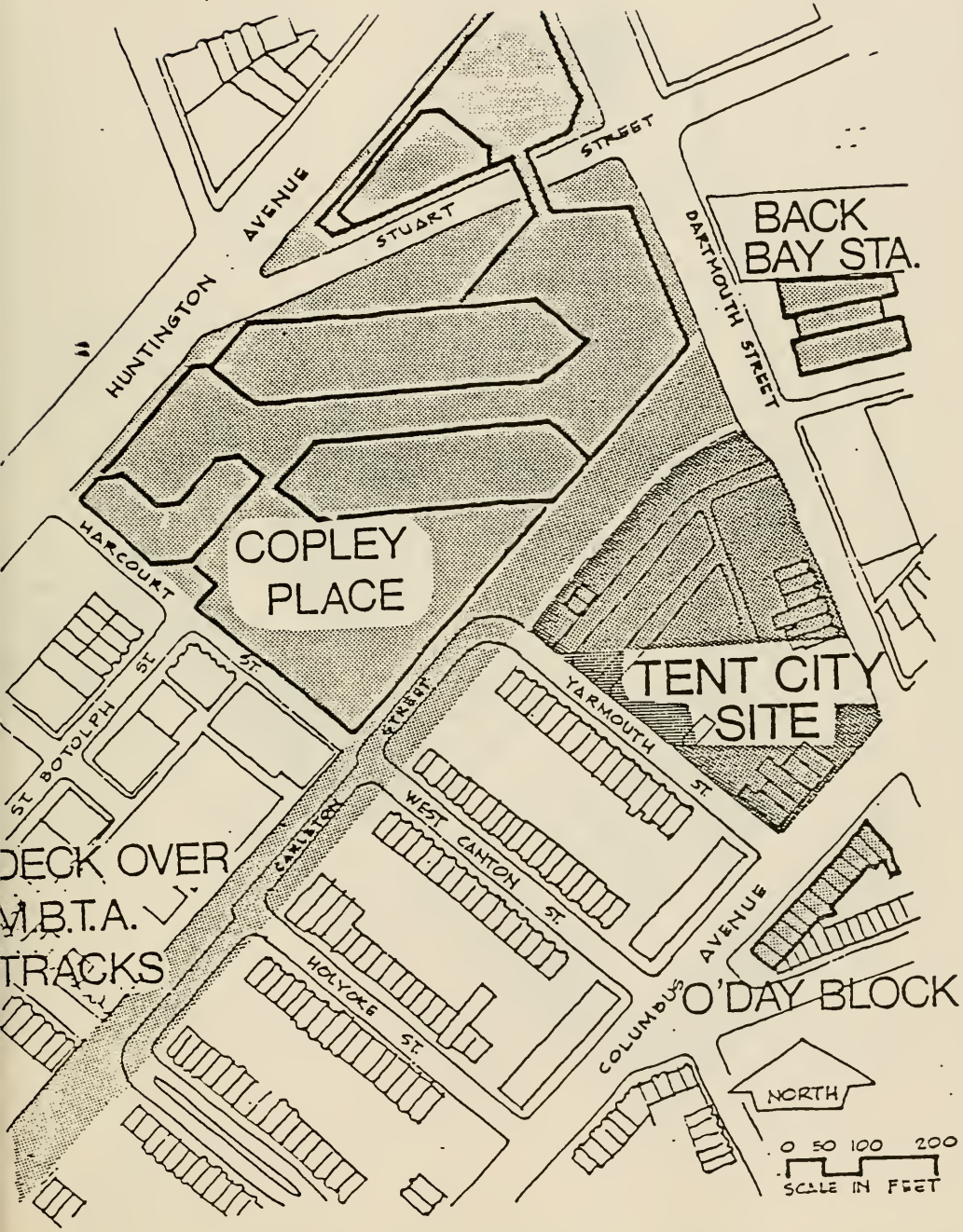
Outlook

In summary, the traffic generated by the proposed new garage would appear to be small compared to the traffic predictions already analyzed in the EIR and would not be perceptable as a significant addition to any South End streets. The maximum addition would be one "new" vehicle every 45 seconds, dissapating quickly into the street network.(South End component).

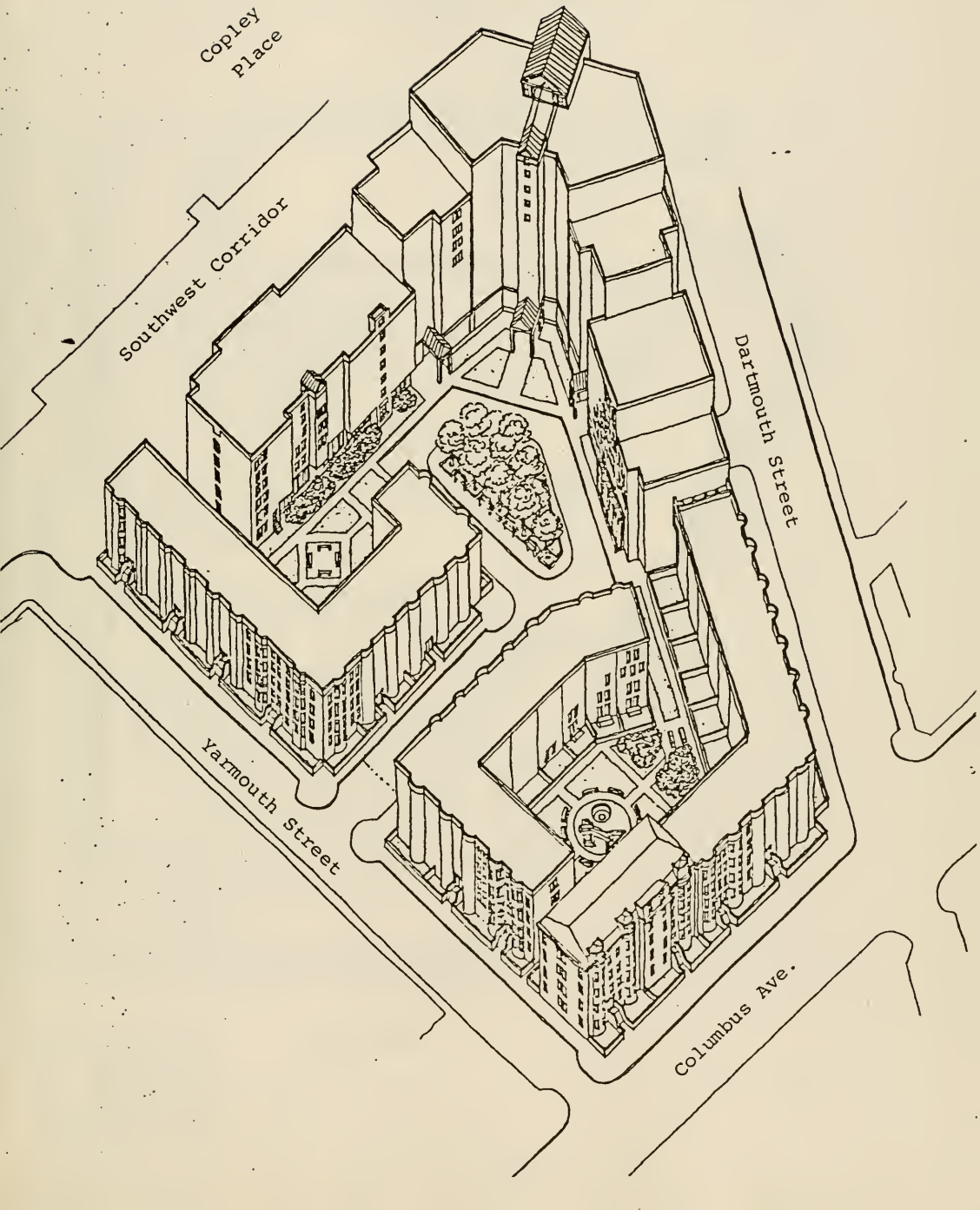
CC: M. Fischman
C. Studen

USGS MAP OF SITE

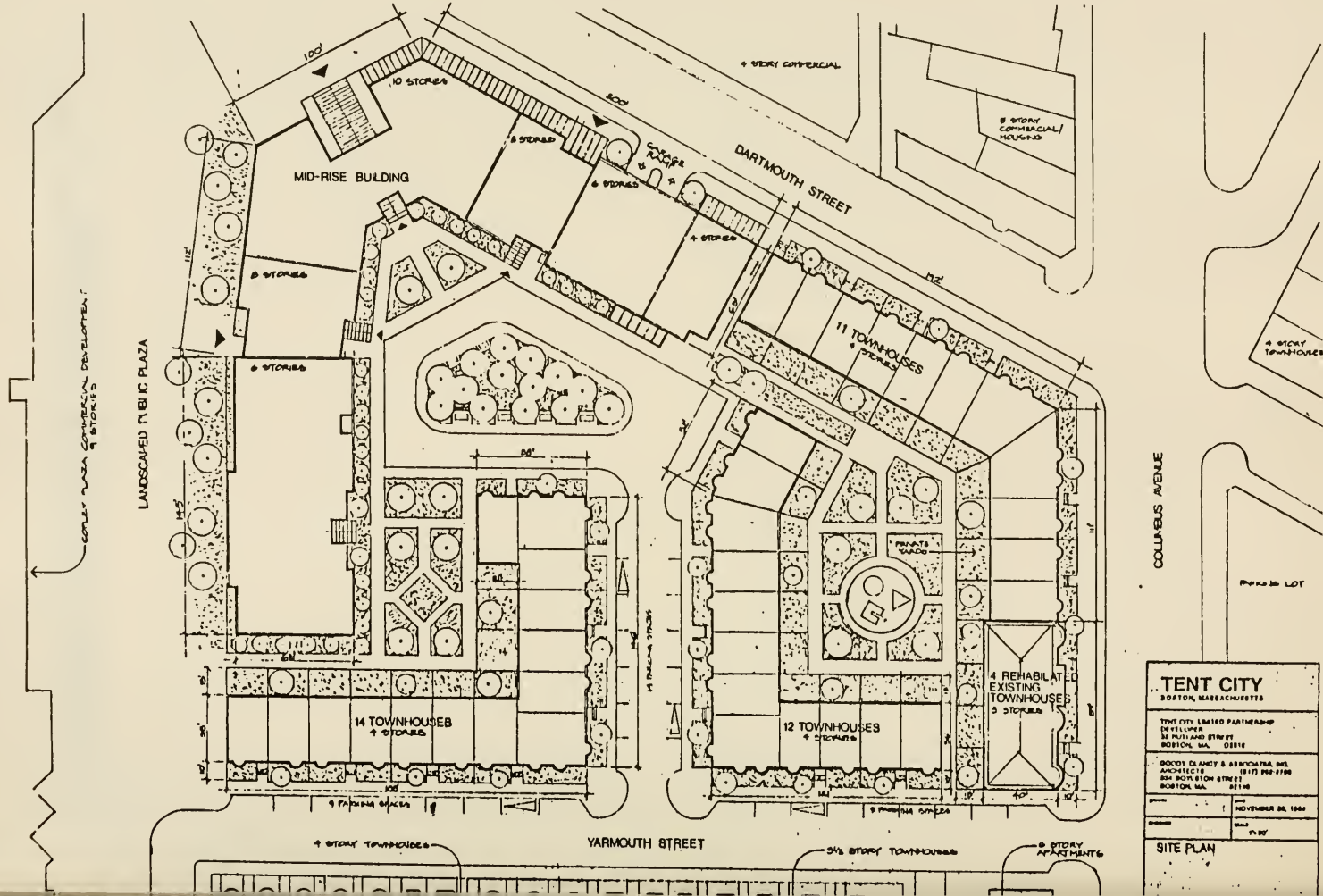



HUNTINGTON AVENUE
STUART STREET
DARTMOUTH STREET
BACK BAY STA.
COPLEY PLACE
HARCOURT ST.
ST. BOTOLPH ST.
TENT CITY SITE
YARMOUTH ST.
CARLTON STREET
WEST CANTON ST.
HOLYOKE ST.
COLUMBUS AVENUE
O'DAY BLOCK
DECK OVER M.B.T.A. TRACKS
NORTH
0 50 100 200
SCALE IN FEET

Axonometric Drawing of
Tent City Site



Attachment 2 (cont'd.)



12.0 CERTIFICATE OF THE SECRETARY OF ENVIRONMENTAL AFFAIRS ON THE ENVIRONMENTAL NOTIFICATION FORM (SCOPING DOCUMENT)

The Commonwealth of Massachusetts
Executive Office of Environmental Affairs
100 Cambridge Street
Boston, Massachusetts 02202

MICHAEL S. DUKAKIS
GOVERNOR

JAMES S. HOYTE
SECRETARY

RECEIVED
JUN 24 1985
SASAKI ASSOCIATES, INC.
By

RECEIVED
JAN 2
GREATER BOSTON COMMUNITY
DEVELOPMENT, INC.

January 23, 1985

CERTIFICATE OF THE SECRETARY OF ENVIRONMENTAL AFFAIRS

ON THE

ENVIRONMENTAL NOTIFICATION FORM

PROJECT NAME	:	Tent City (Parcels 11A and 11B)
PROJECT LOCATION	:	Boston, Massachusetts
EOEA NUMBER	:	5406
PROJECT PROPONENT	:	Tent City Corporation
DATE NOTICED IN MONITOR	:	December 24, 1984

Pursuant to Massachusetts General Laws, Chapter 30, Section 62A, and Sections 10.04(1) and 10.04(9) of the regulations governing the implementation of the Massachusetts Environmental Policy Act, I hereby determine that the Tent City project requires the preparation of an Environmental Impact Report.

The Tent City project consists of the redevelopment of a 3.3 acre site in the South End to provide approximately 270 units of mixed income housing, up to 10,000 square feet of community retail space, and underground parking for 698 automobiles. The project is to be funded partly through grants from the U.S. Department of Housing and Urban Development, the Massachusetts Housing Finance Agency, and the Massachusetts Executive Office of Communities and Development. These funding sources carry with them the requirement to satisfy both the National Environmental Policy Act and the Massachusetts Environmental Policy Act. In addition, the use of a large portion of the proposed parking by tenants of the Copley Place project represents a significant change in the conditions set as a result of MEPA review of Copley Place.

The City of Boston (Boston Redevelopment Authority), acting for HUD, and the Executive Office of Environmental Affairs have reviewed the project and have held a joint consultation and scoping session for the project. Thus, the following scope is intended to satisfy the NEPA review requirements of the HUD regulations (24 CFR 58) and the review requirements of the MEPA regulations (301 CMR 10). It is intended that the proponent prepare a single Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for joint, simultaneous processing under both sets of regulations.

The EIR/EIS should follow the general format given in 301 CMR 10.05(7), modified as required to meet the requirements for EISs in 40 CFR 1502. Where possible, technical data should be relegated to appendices and summarized in the text, which should be prepared for a lay audience and supported with clear graphics and tables. The EIR/EIS must contain a copy of this Certificate and should address the following specific areas:

Project Description - The project description should include a detailed description of the project as proposed, a concise summary of the history and background of the project, a discussion of alternatives that have been considered and rejected, a clear statement of the purpose of and need for the project, and a discussion of the objectives and goals of the project as they relate to Federal, Commonwealth, and City plans and goals for the site and for the South End. In addition, information should be provided on the project schedule, project funding, and permits needed for the project.

Alternatives to the Proposed Project - The EIR/EIS must consider the No Build alternative as the base condition against which the effects of the proposed project can be compared. For the proposed plan, the environmental review process may also yield alternatives considered feasible by the proponent in terms of layout, design, or scale. These should be described, as well, with particular attention to project modifications made to mitigate or eliminate negative effects.

Social and Economic Conditions - The assessment of the social and economic effects of the project should consider housing stocks, community facilities, dislocation/relocation, and community diversity, stability, and cohesion. For housing stocks, data should include the existing mix of owner occupied, market rate, middle income, and low income housing in the neighborhood and the effects of the project on this mix. The community facilities analysis should describe existing public facilities and services available in the neighborhood, the demands placed on these by the project and its residents, and any new facilities or services associated with the project. In terms of dislocation and relocation, a description should be provided of the existing residential and other uses now on the site and of the plans for their relocation. Finally, a description of the mechanisms to be used in the design and operation of the project to support the existing diversity, stability, and cohesion of the South End community should be provided. It is anticipated that, for each of these areas, the analysis can be based on existing data available from the BRA.

Aesthetics and Visual Quality - The EIR/EIS should protray clearly the project as it relates to its surroundings. This should include an analysis of the consistency of the facades with those of comparable row housing in the area, an assessment of the view of the project from the South End, and the view of the project as a gateway to the South End. This section, especially, should provide clear graphics to supplement the text.

Cultural Resources - The proposed project site is located adjacent to the South End Historic District, may contain structures of potential significance, and may be underlain by arecheologic resources. Thus, it will require review under both Massachusetts General Laws, Chapter 9, Sections 26C and 27C and Section 106 of the National Historic Preservation Act. Close coordination with the Massachusetts Historical Commission, the Boston Landmarks Commission, and the City of Boston Archeologist will be necessary. All existing subsurface information should be reviewed with the City Archeologist, any planned new borings should be coordinated with data needs for archeology, and an interpretation of the likelihood of significant archeological remains should be made. Historic resources data should be provided on the integrity and significance of the structures on the project site, an assessment of the effects on these structures should be made, and the measures to limit negative effects should be described. In addition, the effects of the project on the adjacent historic district should be provided, especially in terms of visual and use compatibility. Additional guidance on the format and contents of this section should be sought from the MHC, the Landmarks Commission, and the Archeologist so that, so far as is possible, the data required for their review can be provided as part of the EIR/EIS.

Wind and Shadow - The proposed project may be impacted by winds from nearby high rise development and the project may present shadow impacts to public open space located on the Southwest Corridor deck adjacent to the project site. Existing data from the Copley Place EIR/EIS may be used to assess the effects of wind on the project. No new wind studies are required. Shadow analyses should be prepared for morning, noon, and afternoon conditions at the winter solstice, the summer solstice, and the equinoxes. Net new shadow in public open spaces should be determined from these diagrams.

Geology and Groundwater - Existing geologic and hydrogeologic data, including borings done for the project, should be used to describe subsurface materials and the groundwater regime at the site. Project impacts on groundwater levels, especially during construction dewatering, should be assessed and described. It should be noted that a groundwater level equalization system has been installed under the Southwest Corridor. Plans for preventing impacts to groundwater levels there and elsewhere near the project site should be described.

Water and Sewer - The existing water and sewer systems adjacent to the project site should be described, including size, condition, and capacity. The water needs and sewage generation for the project should be documented, and the effects of these demands on the system should be determined. Plans for the disposal of construction dewatering drainage should be described and assessed. Data on and guidance for these topics may be obtained from the Boston Water and Sewer Commission.

Energy Use and Conservation - The anticipated type and amount of energy use for the project should be described, as should any conservation measures or devices to be employed. Special attention should be paid to the type of heating chosen for the project, since air quality analyses may be required for major fossil fuel boilers.

Parking and Traffic - The inclusion of a substantial number of commercial parking spaces (some to be used for Copley Place) in the project plans leads to the requirement for a careful assessment of the parking and related traffic impacts of the development. The study area for this assessment is to be bounded by Warren Avenue, Berkeley Street, Boylston Street, Dartmouth Street, Huntington Avenue, and West Newton Street. Existing traffic and parking data may be taken from recent studies for the Hynes Auditorium Expansion and 500 Boylston Street and from the files of the BRA and other City agencies. Existing data are of sufficient quantity and quality that no new traffic counts are required. The traffic assessment should include exisitng conditions, No Build conditions in 1988, and Build conditions in 1988. Data should be presented on average daily traffic and peak hour traffic for the network and capacity analyses at any intersection through which a significant portion (approximately 10 percent) of the project traffic will pass. If capacity deficiencies as a result of the project are identified, mitigation measures should be described. In the parking analysis, the relationship of the proposed parking facility to parking commitments made for the Copley Place project, to the requirements of the Boston Parking Freeze, and to the parking needs of the project residents should be assessed. In both of these analyses, cognizance of the adjacent Southwest Corridor transit facilities should be taken and a discussion of the impact on these facilities should be provided.

Air Quality and Noise - Mobile source air quality analyses should be prepared for the intersections of Dartmouth Street and Stuart Street and Dartmouth Street and Columbus Avenue. Point source analyses prepared for the garage venting at Copley Place and the Southwest Corridor tunnel venting should be reviewed for their effects on the project. In addition, the project's garage venting and any on-site fossil fuel boiler with a firing rate of over 3 million BTU per hour should be examined for air quality effects. Guidance on the techniques for these analyses should be sought from the DEQE, Division of Air Quality Control, before the analyses are carried out. Finally, a noise assessment for the project should be prepared using the techniques in the HUD Noise Assessment Guidelines. In both analyses, impacts on both the project site and nearby receptors should be discussed and comparison of the results to Federal, Commonwealth, and City of Boston criteria and standards should be made.

Since the EIR/EIS will serve for both NEPA and MEPA review, processing and circulation will be as directed by 301 CMR 10.31, 24 CFR 58.61, and 40 CFR 1502. The Draft EIR/EIS should be reviewed with both the BRA and the MEPA Unit prior

to filing to allow for the City of Boston's adoption of the document under 24 CFR 58. The BRA and the MEPA Unit will also help to assure that processing and circulation are adequate under both sets of regulations.

During the review of the Environmental Notification Form and as a result of the consultation/scoping session, several thoughtful comments were received on the project. These comments, attached to this Certificate, can serve as additional guidance to the proponent in the preparation of a complete and responsive EIR/EIS on the Tent City project.

Finally, the use of a portion of the proposed parking by tenants of Copley Place requires discussion. I have determined, based on the information contained in the Tent City ENF and a review of the files on Copley Place, that the proposed use of the Tent City garage represents a significant change in the mitigation adopted during the review of Copley Place. In particular, a reduction in total parking and a commitment to encourage transit use were an explicit part of the Certificate on the Final EIR for Copley Place (EOEA #3074), an excerpt of which is attached. I believe, however, that the EIR/EIS for the Tent City project can deal effectively with these concerns and I encourage both the Urban Investment Development Corporation and the Boston Redevelopment Authority to cooperate to the fullest extent in this aspect of the assessment of Tent City. This can avoid the need for a separate Supplemental EIR/EIS for Copley Place.

January 23, 1985
DATE

JAMES S. HOYTE, SECRETARY

Attachments: Talmage (MHC) Letter - 12/28/84
Button (BWSC) Letter - 1/11/85
Maher (DEQE) Memorandum - 1/17/85
Gritter (ENA) Letter - 1/20/85
Park (BPA) Letter - 1/22/85
Boehm (BED/APCC) Letter - 1/22/85
Excerpt (Copley Place Certificate) - 10/30/80

JSH/SCD/sd

EXCERPT FROM

CERTIFICATE OF THE SECRETARY OF ENVIRONMENTAL AFFAIRS

ON THE

FINAL ENVIRONMENTAL IMPACT REPORT

PROJECT NAME	:	Copley Place
PROJECT LOCATION	:	Boston, Massachusetts
EOEA NUMBER	:	3074
PROJECT PROPONENT	:	Urban Investment Development Company
CERTIFICATE DATE	:	October 30, 1980

Employee Parking During Operational Phase

To ensure that the calculated shortfall (estimated to be between 433-673 spaces) of the project does not become the problem of adjacent neighborhoods, it will be essential to carry out the commitments made by the developer and the City to reduce demand for vehicular access to the project by employees. The EIR has shown that in order for Copley Place to handle its own employee demand, over 75% of the employees will have to use public transit. Mitigation measures proposed which should help to achieve that level of transit use are: develop resident parking programs to protect the neighborhoods from all-day parking; develop a rate structure which will maximize use of the commercial spaces; and develop measures which can reduce single-occupant vehicle trips by employees, such as MBTA pass programs and preferential carpool parking.

Who will be responsible for developing and coordinating programs to attain the needed 75% transit use level by employees and for measuring results of those programs? The developer should maintain a continuing role in seeing that this is done, and should respond to this office on this point.

The Commonwealth of Massachusetts
Office of the Secretary of State
Michael Joseph Connolly, Secretary

RECEIVED
JAN 3 1984
OFFICE OF THE SECRETARY OF ENVIRONMENTAL AFFAIRS

Massachusetts Historical Commission
Valerie A. Talmage
Executive Director
State Historic Preservation Officer

December 28, 1984

Secretary James S. Hoyte
Executive Office of Environmental Affairs
100 Cambridge Street
Boston, MA

ATTN: MEPA UNIT

RE: Tent City ENF, Boston

Dear Secretary Hoyte:

Staff have reviewed the Environmental Notification Form for the Tent City project. The notice correctly notes that the site is adjacent to the South End Historic District and the structures on the site most likely qualify for listing as an addition to that district.

Since the project is receiving state and federal assistance, review in accordance with 36CFR 800, the Advisory Council Regulations and 950CMR 71, Procedures to Protect the Historic and Archaeological Properties of the Commonwealth, is necessary and this review should be coordinated with any required Environmental Impact Report.

The guidelines promulgated by the BLC for the site, mentioned in the form, should not be misconstrued as an acceptable substitute for Advisory Council or MHC review. Proposed demolition must be evaluated against appropriate criteria of effect and alternatives to avoid or mitigate adverse effects caused by demolition must be thoroughly investigated and documented.

If you have any questions, please contact Joseph R. Orfant of the staff.

Sincerely,
Valerie Talmage
Valerie A. Talmage
State Historic Preservation Officer
Massachusetts Historical Commission

VAT/hi
cc: Robert Rush, Tent City Corp.
Boston Landmarks Commission
Boston Preservation Alliance
S. Gilbert, HUD Regional Office
D. Altman, Executive Office of Community & Development

Boston Water and Sewer Commission

10 Post Office Square
Boston, Massachusetts 02109
617-426-6046

RECEIVED
JAN 16 1985
OFFICE OF THE SECRETARY OF ENVIRONMENTAL AFFAIRS

January 11, 1985

Secretary James Hoyte
Executive Office of Environmental Affairs
100 Cambridge Street 20th floor
Boston, Massachusetts 02202

Attention: MEPA Unit

Re: Environmental Notification Form
EOEA 5406

Dear Secretary Hoyte:

The Environmental Notification Form for the proposed Tent City project has been reviewed by the Commission staff.

We have advised Mr. Robert Rush, the developer's representative, that water demand and wastewater discharge from the project have been underestimated. He has agreed to recalculate these figures in accordance with Title V of the State Environmental Code.

In addition, we want to remind the developer that dewatering drainage during construction must be disposed of in accordance with Commission regulations. We urge the developer to discuss this matter as well as the impact of proposed project connections on our systems with the Commission engineering staff.

Please notify Michael O'Neill, our Division Engineer, about the date of the scoping session.

Yours truly,

Charles Button

Charles Button, P.E.
Chief Engineer

CB/LB/mo

cc: Robert Rush,
Tent City Corporation

The Commonwealth of Massachusetts
Department of Environmental Quality Engineering
Metropolitan Boston - Northeast Region
323 New Boston Street, Woburn, MA 01801

RECEIVED
JAN 18 1985
OFFICE OF THE SECRETARY OF ENVIRONMENTAL AFFAIRS

TO: Executive Office of Environmental Affairs

ATTN: Steve Davis, MEPA Unit

FROM: Michael J. Maher, Air Quality Section Chief

DATE: January 17, 1985

SUBJECT: EOEA #5406- Tent City (Parcels 11A and 11B), Boston; Review of the Environmental Notification Form.

This office has received the environmental notification form (ENF) submitted by Tent City Corporation for the construction of the proposed Tent City in Boston (EOEA #5406). According to the ENF the project will consist of approximately 270 units of housing, 5,000 to 10,000 square feet of retail space, and underground parking for 698 cars (569 spaces will be for commercial use). Based upon a review of the project by staff from the Department's Division of Air Quality Control, we offer the following comments for your consideration.

1. Given the proposed size of the development, number of parking spaces required, existing and proposed traffic conditions, and location within the City of Boston, the Department is concerned about the continued maintenance of ambient air quality standards within the project area. An air quality analysis, based upon the project's impacts should be required as part of an environmental impact report. The Department's Division of Air Quality Control should be contacted regarding the model to be used.

2. The traffic analysis upon which the air quality analysis will be based, should expand upon the Hynes Auditorium and 500 Boylson Street EIRs, in addition to the Copley Place EIR as was done for the ENF. Special care should be taken in accounting for vehicles that have been displaced by other developments in developing total vehicle trips resulting from the use of the proposed parking garage. As important as the prevention of doublecounting might be, the Department is also concerned about undercount-ing total trip generation.

3. The proponent must submit formal plans to the Department and receive Departmental approval for any fossil fuel burning facility with a capacity greater than 3 mm BTU or any incinerator proposed for this development as per DEQE regulation 310 CMR 7.02. Such approval must be granted prior to the construction of the facility.

4. The proponent should suggest measures to alleviate dust and noise nuisance conditions which may occur during and after construction. Such measures must comply with DEQE regulations 310 CMR 7.09 and 7.10.

Please contact Barry Porter of the Division of Air Quality Control (292-5598) should you have any questions.

cc: R. Mertens, BRA
G. Boehm, BAPCD
R. Rush, Tent City Corp.

ELLIS NEIGHBORHOOD ASSOCIATION, INCORPORATED
52 Chandler Street Boston, MA 02116 542-5891

January 20, 1985

RECEIVED
JAN 22 1985
OFFICE OF THE SECRETARY
OF ENVIRONMENTAL AFFAIRS

Mr. Richard B. Mertens, Environmental Review Officer
Boston Redevelopment Authority
City Hall
Boston, MA 02201

Dear Mr. Mertens:

Re: Tent City Development Project Environmental Impact Statement Scoping.

The quality of urban living in in-town neighborhoods such as the South End is changing as a result of the intense level of recent development. Much of the change is beneficial, but some of it only compounds long-standing problems or creates new ones.

The relativley short span of time in which so much has been built or is about to be built is of great concern to many residents of the Ellis neighborhood. Scarcely are the impacts of a new project experienced or fully understood before another is under way. We have only to look at the projects in the planning stage to realize what the potential aggregate effect could be on our quality of life.

Boston's need for affordable housing is clear. What is also clear, however, is the negative impacts of the growing volume of traffic on Ellis neighborhood streets, particularly Dartmouth Street. It is imperative that as much research, study and measurement as possible be undertaken to understand and mitigate any adverse effects of the Tent City development or any other large-scale development project.

We, therefore, request a broadly scoped environmental study which would address the following areas of concern: 1.) Transportation, emphasizing vehicular traffic volumes and parking demand; 2.) Air quality, emphasizing current and projected automobile emission levels in the impact area; 3.) Natural resources, emphasizing effects on groundwater levels; 4.) Water and sewer impacts; 5.) Socio-economic factors relating to the impact area; 6.) Historical and visual quality issues; 7.) Wind and shadow impacts, 8.) Archaelogical significance of the site.

Finally, we request that future public meetings regarding any aspect of the proposed Tent City development project be held at a location closer to the site and to those residents who will be most affected by it. In the same vein, we ask that future meetings be scheduled to accommodate the normal work hours in order to allow for maximum public participation.

Very truly yours,

Kenneth J. Gritter
President

RECEIVED
JAN 22 1985
OFFICE OF THE SECRETARY OF
ENVIRONMENTAL AFFAIRS

CC. James S. Hoyte, James M. Kelly, Thomas M. Menino

The Boston Preservation Alliance

Old City Hall, 45 School St., Boston, Massachusetts 02108

ECEIVED
JAN 25 1985
CE OF THE SECRETARY OF
VIRONMENTAL AFFAIRS

RECEIVED
JAN 22 1985
OFFICE OF THE SECRETARY
OF ENVIRONMENTAL AFFAIRS

January 22,1985

Secretary James S. Hoyte
Executive Office of Environmental Affairs
Leverett Saltonstall Building
100 Cambridge Street
Boston, MA 02202

Attention: MEPA Unit
File No. EOEA #5406

RE: Tent City

Dear Secretary Hoyte:

On behalf of The Boston Preservation Alliance, Inc., a non-profit preservation organization, I would like to request a full Environmental Impact Review be required of the project known as "Tent City."

Due to the magnitude of this proposed project our areas of specific concern are:
- Archeology
- Historic buildings on site
- Wind
- Shadow
- Traffic
- Parking
- Visual quality and urban design (height and massing of the building in the northeast corner)
- Texture

In addition, according to the Massachusetts Environmental Policy Act, Regulation 301, CMR, Section 10.05 a broad scope must be considered if state or federal funding is involved.

To insure that the above issues are addressed properly, The Alliance requests that you initiate all appropriate review procedures under MEPA.

Sincerely,

Susan Park
Chairman

City of Boston
he Environment
Department

on City Hall/Room 805
n, Massachusetts 02201
725-4416 or 725-3850

January 22, 1985

Secretary
Executive Office of
Environmental Affairs
20th Floor
100 Cambridge Street
Boston, MA 02202

Attention: MEPA UNIT
Mr. Steven C. Davis

RE: EOEA #5406 - Tent City Project

Dear Secretary Hoyte:

The following are comments from the different Commissions within the City of Boston Environment Department on the aforementioned project.

The statement in the ENF under III.B.1. is only partially correct. The quote from the Landmark District Study Report omits the first clause of the sentence in this paragraph. It would correctly read "Notwithstanding standards for the height of new buildings described above, the height of development...". The standards and criteria for new construction (II.A.5(b)-general intent and II.B.1. -heights) allow a 70' height maximum and 30' minimum.

The proposed project will be subject to review and approval under the South End Landmark District and as an adjacent parcel to a National Register District may be subject to a 106 Review. While certain issues of height and design characteristics of the proposal may be considered problematic, the intent of the development to be compatible in scale, massing, and uses within the larger South End residential community is seen as a benefit to the historic character of the neighborhood.

The statement in the ENF under III.B.2. is only partially correct. This particular parcel is in close proximity of the known location of the Boylston Street Fishweir, and the City of Boston Archaeologist requests to review the boring plan and to receive the results from the developer. The need to be involved in the boring plan is to ensure the necessary information is provided to determine the nature of the subsurface deposits.

The general statements throughout the ENF that based upon the Copley Place EIR/EIS there should be no adverse effects to air quality from the increase in traffic, must be further studied. New air quality monitoring data should be accomplished along with actual traffic counts that exist today. Then the study can add the projected increases from other developments that are being planned such as the Hynes expansion, Prudential expansion, 500 Boylston Street, John Hancock garage expansion of 700 spaces, National Garage expansion, etc. Using the Copley Place projections done in 1980 is inadequate.

There is a serious problem with the size and use of the proposed parking garage as it relates to the City of Boston Parking Freeze. The proposal to have 569 spaces for commercial use can NOT be accommodated by the Parking Freeze Bank. The existing commercial parking spaces on the open-air lots were originally designated for use within the Copley Place Garage. Since the Copley Place Garage used other spaces from the Parking Freeze Bank, planned for other development within the City, these spaces are needed for other planned projects. While it is possible that the existing commercial spaces could be permitted to Tent City, that would be the maximum available (276 spaces) In addition, the proposed parking for the residential units (116-129 spaces) is believed to be not adequate for the projected demand of a total of 270 units of housing.

Very truly yours,

Geoffrey M. Boehm
Executive Director
Air Pollution Control Commission

CC: M. Myers, Environment Dept.
J. Connolly, Mayor's Office
S. Coyle, BRA
J. Tighe, Tent City Corp.

13.0 MEMORANDUM OF UNDERSTANDING

Tent City

Environmental Impact Statement/Report
EOEA #5406

MEMORANDUM OF UNDERSTANDING

Prepared by Sasaki Associates, Inc.

April 11, 1985

Proposed Outline for Tent City EIS/EIR

Cover Sheet

Summary

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- 1.3 Project Description

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3.10.2 Probable Impacts
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4.0 Unavoidable Adverse Impacts

5.0 Short Term Use of the Environment versus Long Term Productivity

6.0 Irreversible and Irretrievable Commitment of Resources

7.0 Literature Cited

8.0 List of Preparers

9.0 List of Agencies and Persons to Whom Copies Have Been Sent

Appendices

I. Environmental Notification Form and Letters of Comment

II. Certificate of the Secretary of Environmental Affairs on the Environmental Notification Form (Scoping Document)

III. Technical Reports

Purpose - The purpose of this document is to outline the issues, methodology, and product for each of the impact categories discussed in the Secretary's Certificate on the Tent City ENF and further clarified in a meeting on February 26, 1985 with Messrs. Mygatt and Davis.

The proposed coversheet and format for the EIS/EIR document also is attached.

IMPACT CATEGORIES

1. Social and Economic Conditions

Scope: The assessment of social and economic effects of the project will consider existing housing stock, community facilities, dislocation/relocation, and community diversity, stability, and neighborhood cohesion.

Methodology: Data will be collected from the BRA and will include neighborhood planning reports, U.S. Census data, and other available sources. Housing stock data for owner occupied, market rate, middle income, and low income housing will be presented. The effect of the Tent City housing will be determined in terms of how many of these additional housing types will be provided in the neighborhood.

Community facilities and services analyzed will include schools, fire and police protection, parks and recreation, and health care. Existing facilities in the South End will be identified, and new facilities provided by Tent City will be described. The likely demands placed on these facilities by Tent City residents will be determined according to standard methodologies from planning sources such as The Fiscal Impact Handbook (Burchell and Listokin) and American Planning Association publications.

The relocation plan from the UDAG application will be presented, and existing residential and other uses on the site will be described.

A description of mechanisms to be used in the design and operation of Tent City to support the existing characteristics of the neighborhood will be provided. This will entail a description of 1) design intentions that will physically integrate the development with surrounding uses, and 2) operational issues such as tenant selection procedures that encourage a diversity of tenants based on age, income, ethnicity, etc.

Products: The above mentioned information will be provided in a text format with supporting graphic materials.

2. Aesthetics and Visual Quality

Scope: The visual compatibility between the project and its surroundings will be shown. The project's visual impact as a gateway to the South End and from the South End along Dartmouth Street will be shown.

Methodology: The project architect will prepare two perspective renderings illustrating the project's architectural characteristics and facade treatment. The renderings will be projected north and south along Dartmouth Street to illustrate how the project will look from the South End and as a gateway to the South End. Existing buildings will be shown in context with the proposed project.

Product: Two renderings as mentioned above will be presented, accompanied by supporting text.

3. Cultural Resources

Scope: The impacts of the project on any determinable archeological resources will be assessed. An assessment will be made as to the significance of existing buildings on the site. The visual and use compatibility effects of the project on the adjacent South End Historic District will be assessed.

Methodology: The Massachusetts Historical Commission, the Landmark Commission and the City of Boston Archeologist will be consulted to determine the format and contents which they will require for their review under MGL c.9 s.26c and 27c and Section 106 of the National Historic Preservation Act.

Existing subsurface information will be sent to the City Archeologist for an opinion with respect to the site's potential as a resource area. An assessment will be made as to the integrity and significance of the existing structures on the site and the effect of the project on these structures. The effects of the project on the adjacent South End Historic District will be described using the rendered perspectives prepared for the visual/aesthetic impact category.

Product: Documentation prepared for the State and Federal review process will be presented. Responses prepared by the MHC in accordance with 950 CMR 71.00 will be included if available at the time of filing.

4. Wind and Shadow

Scope: The wind impacts from Copley Place on the project will be determined. The shadow impacts of the project on the public open space deck of the Southwest Corridor will be determined.

Methodology: The Copley Place EIS/EIR will be reviewed to determine the likely wind impacts from Copley Place on the project.

Shadow drawings will be prepared by the project architect for morning (9:00 a.m.), noon, and afternoon (3:00 p.m.) conditions at the winter solstice, summer solstice, and equinoxes. Net new shadows on surrounding public open spaces will be determined from these diagrams.

Product: A description of likely wind impacts on the project from Copley Place will be provided. Shadow drawings and accompanying text will be presented.

5. Geology and Groundwater

Scope: Existing subsurface materials and the groundwater regime on the site will be described. Potential project impacts on groundwater levels (especially during construction dewatering) will be assessed.

Methodology: Existing boring information from Haley and Aldrich will be used to describe subsurface materials and groundwater conditions, including the depth to bedrock, water table, and existing soil types. Based on garage construction techniques, provided by Macomber Construction Company and the project structural engineer, the potential construction and development impacts will be assessed. Available information on the groundwater equalization system for the Southwest Corridor will be reviewed. Plans for preventing impacts to groundwater levels at the Southwest Corridor and project site will be described.

Product: Subsurface logs and accompanying text will be presented to describe existing subsurface soil and water table conditions, and likely impacts.

6. Water and Sewer

Scope: The existing sewer and water systems adjacent to the site will be described. The impact of the project on these systems will be determined. Plans for disposal of dewatering drainage will be presented.

Methodology: The Boston Water and Sewer Commission and/or MDC will be contacted to determine the location, size, condition, and capacity of water and sewer lines serving the site. State Environmental Code (Title V) generation rates will be used to determine water consumption and sewage generation rates for the project. The impact of the project demand on the water and sewer systems will then be determined.

Plans for disposal of construction dewatering drainage will be described based on information provided by Macomber Construction Company and the project structural engineer. The potential resulting impacts will be assessed.

Product: Description of existing water and sewer lines and project impacts on these systems will be provided.

7. Energy Use and Conservation

Scope: The energy demand and conservation measures incorporated into the project will be described.

Methodology: The type and amount of energy use will be described, including the heating, electrical and/or gas systems. Special conservation materials and operational measures will be described. These descriptions will be based upon information provided by Tent City Corporation and the project architect.

Product: Summary text of likely energy use demands will be provided.

8. Parking and Traffic

Scope: The parking and related traffic impacts of development will be assessed.

Methodology: The study area will be bounded by Warren Avenue, Berkeley Street, Boylston Street, Dartmouth Street, Huntington Avenue, and West Newton Street. The conditions and years analyzed will be existing conditions in 1984, No-Build conditions in 1988 and Build conditions in 1988. Data will be presented for average daily traffic and peak hour traffic (7:15 am to 8:15 am and 5:00 pm to 6:00 pm). Existing parking and traffic data will be taken from the Hynes Auditorium EIR (1984), the 500 Boylston Street Project EIR (1984) and reports available from the BRA and the Boston Traffic and Parking Department.

Trip generation, trip distribution, modal split, and traffic assignments will be determined for the residential and commercial component of the project. Network capacity analysis will be performed for intersections through which 10 percent or more of the project traffic within the study will pass. The critical movement analysis technique procedures of the Transportation Research Board (1980, Circular #212) will be employed in these analyses. Capacity deficiencies resulting from the project will be identified and mitigative measures will be described.

Additionally, a traffic impact assessment will be performed for a down-sized garage that consists of a combination of the following:

- the current number of permitted surface parking spaces on the site,
- the difference between the number of spaces approved in the Copley Place EIS/EIR and the number of spaces actually constructed,
- the currently proposed number of residential spaces for the site.

Based upon the impact analysis conducted for the 698 space garage, only those intersections expected to achieve a Level of Service "D-F" will be evaluated for this smaller garage.

The proposed parking facility will be described and assessed as it relates to parking commitments for the Copley Place project, the Boston Parking Freeze, and to the parking needs of the project residents.

The traffic and the parking analysis will consider the adjacent Southwest Corridor transit facilities. The impact of the project on the transit facilities also will be discussed.

Product: Trip generation, trip distribution, modal split, traffic assignments, capacity analyses, and mitigative measures will be presented with accompanying text and graphic illustration.

9. Air Quality

Scope: Air quality impacts of the project will be analyzed as described below.

Methodology: A microscale carbon monoxide analysis will be performed for two intersections: the Dartmouth Street/Stuart Street intersection and the Dartmouth Street/Columbus Avenue intersection. The conditions and years of analysis, and the source of traffic data will be the same as that described for the traffic analysis.

The modeling methodology for emission factors is Mobile 3, and for dispersion analysis, either Volume 9 or Caline 3. The results of the analysis will yield one and eight hour carbon monoxide concentrations.

The project garage venting will be examined as a point source on project and surrounding sensitive receptors. The Halitsky empirical model (DEQE 1982) for gas diffusion near buildings will be used for this analysis.

Existing reports will be reviewed to determine the effects on the project of garage venting at Copley Place and the Southwest Corridor.

A permit and accompanying plans will be filed with DEQE for any on-site fossil fuel boiler with a firing rate of over 3 million BTU per hour during final design of the project.

Correspondence with DEQE, Division of Air Quality Control, is attached. This correspondence presents detailed methodology and data assumptions to be used in the air quality analysis.

Exceedences of the National Ambient Air Quality Standards resulting from the project will be identified and methods to minimize adverse impacts will be described.

Product: The product of the air study will be a technical report illustrated as appropriate and appended to the draft Environmental Impact Statement/Report. Summary text will be provided.

10. Noise

Scope: A noise assessment of the project will be prepared.

Methodology: Sensitive noise receptors including and adjacent to the site will be selected. The HUD methodology (Bolt, Beranek & Newman, Inc., 1983) will be used to assess community level noise disturbances caused by existing urban noise sources, with respect to existing conditions (1984), No-Build conditions in 1988 and Build conditions in 1988. Personnel from various agencies such as Massport, MBTA, and others will be contacted for identification of transportation routes. The results will be compared to the HUD design noise levels for community use criteria in 310 CMR 7.10, and regulations for the control of noise in the City of Boston. Should exceedances of the design noise levels occur, feasible methods to attenuate these disturbances will be identified.

Product: The product of the noise study will be a technical report illustrated as appropriate and appended to the Draft Environmental Impact Statement/Report. Summary text will be provided.

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